

The Journal of the Michigan State Medical Society

PUBLISHED UNDER THE DIRECTION OF THE COUNCIL

VOL. V

DETROIT, MICHIGAN, FEBRUARY, 1906

No. 2

Original Articles

THE SIGNIFICANCE OF ITCHING AND AN ANALYSIS OF METHODS SUGGESTED FOR ITS RELIEF.*

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Probably in no other disease is a symptom so prominently associated with its varying intensity as is the sense of itching in diseases of the skin. It modifies not only the disease itself, but brings into play other active agents, and so pronounced is this factor that often but little hope of relieving the patient of his existing disease can be expected, unless the effort is aimed primarily at the relief of the itching. There is not one of us who is not called upon almost daily to give relief to the distress and yet how little understood is the manifestation. It is clearly a nervous disturbance; but what produces it and why the act of scratching gives relief are problems still difficult of solution. An analysis of the various senses would lead us to believe that it is *not* simply a disturbance of contact, an independent phenomenon, but a complex one, associated indefinitely with common sensation, with the tactile, muscular and pressure senses and the sense of temperature. It is a matter of common observa-

tion that the lightest touch of a feather or the lead of a pencil to sensitive parts will provoke an active itching when a heavier touch of lead would provoke coldness or pain.

Itching is common to most animals, most marked in the hairy and feathered, at times being apparently spontaneous and physiological, as witnessed in the scratching of the hen in her daily dirt bath and the relief felt in the scratching of the head when the slight seborrhoic scales are removed. Again it seems to be indispensably allied to the sense of tickling, picking, creeping, crawling; and yet the senses of smarting, burning, stinging, with which the sensation of itching is often associated, seem to be clearly painful sensations, sensations distinctly antipathetic, for painful sensations are usually aggravated by scratching. Itching carries a suggestion of something extraneous to the body, as if provoked by an external irritant; implies an element of objectivity; in a painful sensation the feeling is purely subjective. "The one is a longing desire to resist, the other the passive endurance of a penalty."

*Read at the annual meeting of the Third Councilor District Medical Society, Battle Creek, October 18, 1905.

But it would seem that the sensation of itching must have to do with the free nerve terminals in the epidermis, as evidenced by the fact that itching occurs only when the epidermis is involved in the pathological process. Deep seated affections do not itch, only those the lesions of which are superficial; and diseases of the connective tissue do not itch, even though superficially located. Lupus, the sarcoma of the skin, the epithelioma do not itch, except the latter sometimes in the formation of the crust and in the process of repair. Mycosis fungoides, closely allied to the sarcoma, itches only in its early or eczematous stage, when the epidermis is involved.

In the erythematous, erysipelatous and phlegmonous inflammations the sensations are of a smarting, burning, aching character, *i.e.*, painful. Itching, if present, is due to secondary implications of the epidermis. In the papular affections, syphilis for example, which are characterized by infiltrations confined to the corium or papillary body, itching, if it occurs, is an accidental complication.

It would seem that the acuteness of the symptoms and the rapidity with which the changes occur intensify the degree of itching. When the development is slow and there is little disturbance of the nerve endings, as with the anomalies of growth, there is little or no itching. Note the slight itching of the psoriatic, and the intolerable itching of scabies, of pediculosis, of lichen planus and the scratched skin of some of the stages of eczema, in which the itching has been so intense that the nail has denuded the skin to the rete mucosum, has torn asunder the follicular prominences and the skin consists of a mass of excoriated, denuded, infiltrated tissue with secondary pustular forma-

tions, enlarged neighboring lymphatic glands, and, where the itching and inflammation have been of long standing, the skin is thickened and pigmented. Witness again the usual slight itching of some of the exanthemata and the intolerable and uncontrollable itching of some of the toxines.

But not always is the sensation resulting from scratching one of pain. The awakening of the aphrodisiac sense by the scratching of the scrotum, the mammary gland, the nipple, or the external auditory canal is familiar to us all.

Itching then may be only an annoying symptom of a disease of the skin, or, on the other hand, a sensory neurosis due to a direct or reflex irritation of any part of the nervous system from the center to the periphery without any appreciable change in the skin itself, though in both cases the involvement of the epithelial layer seems to be necessary. As examples of the former may be enumerated again the truly pruriginous affections as scabies, eczema, pediculosis, and lichen planus. Here the itching is usually limited to the area involved in the cutaneous lesion, as in the various parts affected by the eczema, by the acarus or by the pediculus; but not necessarily so, as often the itching is in a part remote from the outbreak.

Itching as the prominent and sometimes sole symptom may be general or local. If universal it is not usually present in all parts of the body at one time, but now here and now there. Often it is distinctly local as in itching of the anus, the scrotum or the vulva.

It is principally in the aged (*pruritus senilis*) that the itching is universal, and may be due to the inordinate dryness of the skin following the atrophy of the sebaceous and sweat glands, or to defective

elimination from kidney and other degenerations. In the middle aged it is often the accompaniment of jaundice, of dyspepsia, of the gouty state, of albuminuria and chronic Bright's disease, of lithæmia and rheumatism, of diabetes mellitus, of fermentative processes of the bowels, of ovarian and uterine diseases, of pelvic tumors and of pregnancy, and may often be due to a central disease and may accompany anxiety, mental troubles and depressing mental influences.

In children it is frequently observed that the ascarides in the rectum, tapeworms and lumbrici in the higher bowel, catarrh of the intestinal canal will cause itching of the anus.

Often the itching is a reflex phenomenon from an internal organ or from a mechanical or chemical irritant. Indigestion of certain foods and medicines, especially in the susceptible, even such everyday drinks as tea, coffee and alcohol, or such food as cheese, or medicines as mercury, belladonna, and especially opium, will cause an itching, the symmetrical distribution of which shows that the nerve centers are attacked. The common assumption, however, that in the toxemias, in icterus, uraemia, diabetes mellitus, or lithæmia the itching which occurs is due to the direct action of the toxic material circulating in the blood is not well established. Yet it may be that, as the skin is an emunctory organ, the toxic substances are eliminated through it and by their presence cause irritation of the skin.

The itching of hemorrhoids and of the genital region during pregnancy is due to the pressure of the blood in the engorged venous plexus, and a mechanical pressure is probably accountable for the itching at the end of the penis caused by a calculus or other irritant at the neck of

the bladder. Itching of the pudendum is often an early symptom of cancer of the uterus. Weather changes, exposure to cold or heat, the application of certain drugs and plants, the change of clothing, a change of posture from an upright to a recumbent position "(due to the alteration in the blood pressure in the direction of increased tension)" are often fruitful sources of itching.

TREATMENT.

A symptom occurring under such varying circumstances can have no specific for its relief and so probably in no other affection of the skin is the skill of the physician and his knowledge of general medicine put to so severe a test. Varied and indefinite as are the sources of itching, so uncertain and empirical are the remedies for its relief and as varied are their actions.

Whether the itching be merely a symptom of a cutaneous lesion or the only appreciable symptom referable to the skin, the aim of rational therapy must be to ascertain the true cause and to attempt its removal.

INTERNAL.

The internal treatment is dietetic as well as medicinal, for my own observation has taught me to heed the close relationship of itching to one's general health, to the character of the food taken and to the condition of the gastrointestinal tract. The dietary must be of the simplest character and of easy digestion. The usual avoidance of alcoholic drinks, etc., must be enforced; the bowels must be regulated by the use of the various laxatives and saline waters. To the rheumatic, to the icteric, to the dyspeptic, to her suffering from uterine or ovarian disease or disease of the kidney the ap-

propriate remedy must be applied; to the anæmic the judicious use of cod liver, iron, strychnine, and in the chronic state sometimes the use of arsenic.

We need hardly dwell on this further than to state that only in a few cases other than the acute should reliance be placed on strong sedatives or opiates, except that frequently in chronic urticaria and in the rashes of the diabetic relief is obtained by the use of codein.

Bulkley of New York has suggested the use of the tincture of *cannabis indica* in doses of five minims, increased to twenty or thirty minims three times a day, well diluted with water, which appears to act by diminishing cutaneous sensibility. He has used also with favor the tincture of *gelsemium* in doses of ten minims, repeated every half hour until one drachm has been administered or toxic symptoms have appeared. Hutchinson of London advocates the use of *vinum antimonium tart.* in five minim doses three times a day. Antipyrine and phenacetine are useful in selected cases.

EXTERNAL.

Much is expected of external treatment and much may be done, for, even where the cause cannot be influenced, temporary relief may be given, so that the patient refrains from scratching; secondary cutaneous complications are avoided and the irritated skin is given a much needed rest.

But here again there is no specific treatment. Certain remedies relieve the itching by the protection they give from the baneful influence of the air and temperature, others through a sedative action on the skin, including cutaneous anæsthesia, others by their astringency and still others by their stimulating and specific benumbing of the nerves.

So numerous are the remedies, however, that it will be impossible to review but a few of the principal ones:

Luke-warm and moderately hot baths diminish the irritability of the sensory nerves. In *pruritus senilis*, in *pruritus* connected with disease of the liver, in *pruritus hiemalis* the warm bath (94°F. to 98° F.) is often beneficial, especially before the application of antipruritic remedies, and, although water is contraindicated in almost every case of eczema, the addition of indifferent substances, such as starch, bran, oatmeal, cornmeal, flaxseed, soothes the excoriated skin. Vapor and turkish baths are not employed in diseases of the skin with much success, though hot and cold douches are often of use in the relief of itching of the anus. Very hot applications, as hot as can be borne, are effective in relieving some of the most obstinate forms of *pruritus*. This method is also successful in cases of eczema in which the skin is dry and thickened. The itching of acute eczema may generally be promptly relieved in this way, the relief often lasting for several hours. It is necessary, however, to dry the parts and to cover quickly with some proper protection after the hot application. In some cases alternate applications of hot and cold, each 15 seconds, repeating the alternations for a number of times, is more effective than the hot application alone.

Cold applications and cooling or evaporating lotions are in certain cases more effective than hot or alternate applications. This is especially the case where there is elevation of temperature, either general or local.

Perhaps it is that the true pathological condition of the itching epidermis is little

understood, but it would seem that the human skin is uncertain in its response to the application of acids and alkalies. In the one a weak solution of any of the common acids gives relief, when to the other it produces an intolerable irritation; and to the latter perhaps the alkali solution offers relief, the soothing effects being due probably to some osmotic action.

Where an extensive surface is involved and a bath is required it can be made acid by the addition of

Ac. Nitrici Fort., f̄ss;
Ac. Hydrochlor. Fort., f̄j;
Aquae, Cxxx (30 gallons);

and alkaline

Sodii Carbonatis, ̄ iij;
Aquae, cxxx.
Potassii Carbonatis, ̄ iv;
Sodii Carbonatis, ̄ iij;
Sodii Biboratis, ̄ ij;
Aquae, (Cxxx);

with the addition of half a pound of starch.

The most frequently used, and the most successful of the antipruritics, due to their stimulating effect and to their specific benumbing of the nerves, are phenol, camphor and menthol, but much discrepancy exists as to the strength of the ingredients, especially as regards phenol. I never use it in greater proportions than five to ten minims to the ounce, but some advocate its use as high as 20% to 30%, sufficiently strong to benumb the parts. It may be incorporated in a lotion with water in the proportion of three drachms to the pint with an ounce of glycerine. Camphor is usually combined with phenol in the proportion of three to one by weight (camphor-phénique) or with chloral in equal proportions. Menthol is usually used in an ointment

base, or in olive oil, ten to fifty grains to the ounce.

In the astringent class may be found a weak solution of alum, of citric acid, and a solution of lead, especially the subacetate, two to three drachms to the pint; of dilute hydrocyanic acid, half to one drachm to the pint, or pyroliginous acid one to thirty.

In the disinfectant class the best preparation is tar, as found in the liquor carbonis detergens two drachms to eight ounces, or liquor picis alkalinus, or lysol, a drachm and a half to eight ounces, or naphthol.

For its purely anæsthetic effect cocaine is used, especially in pruritus vulvæ vel ani, but care should govern its use, for fear of establishing a deliterious habit after repeated applications.

For its analgesic effect resorcin is often used in solution, as are ichthyol and tumenol; and among other medicants are orthoform and a strong solution of the nitrate of silver, the latter applied with a brush, as in pruritus ani.

Most of the proprietary remedies depend for their efficiency upon phenol, menthol, camphor, resorcin, or a weak solution of tar.

Ointments and lotions are the most efficacious in the relief of itching. The efficiency of the ointment may be enhanced by incorporating either the peruvian balsam, glycerine, tincture of benzoin, olive or linseed oil, separately or in combination for their protective features.

The Roentgen rays and the high frequency current have here but a little field of usefulness, although I have seen relief follow repeated exposures in pruritus ani; but I have had no success whatsoever with the faradic or galvanic current.

In conclusion I would state it is my experience that in diseases of the skin we are tempted to employ too strong medications. The denuded skin like other organs of the body is very sensitive; and in a large majority of cases, especially in

the acute stages, soothing remedies only should be permitted. A mild disinfection and a continuous protection form the key to the successful external medication of cutaneous diseases, except those of a purely parasitic character.

THE BUILDING OF A PHYSICIAN.*

CHAS. H. LEWIS,

Jackson.

President Jackson Co. Medical Society.

Members of Jackson County Medical Society:

Ladies and Gentlemen—In discharging this, my last duty as your president, I ask you to accept my sincere thanks for your hearty co-operation throughout this most pleasant and harmonious year of the life of the Society.

"The thing that hath been, it is that which shall be, and there is no new thing under the sun;" for this reason I bring you no novel thoughts, but only the iteration of old ones. Some themes are ever timely, and there are truths which can hardly be too often repeated; in this class belongs everything which contributes toward increasing the excellence, and thus exalting the dignity of our profession.

Though the subject of preparation for the practice of medicine is, as a matter personal to us, in the nature of a back number, I feel that no apology is needed for presenting it to those who realize the almost irresponsible power over health and life possessed by the physician, and who, loving their profession, desire to see it pursuing a course which, like "the path of the just," "shineth more and more to the perfect day."

No organization for any purpose, can

long sustain a public estimation above the average reputation of its members; and the medical fraternity can hold a position of honor in the world corresponding with the nobility of its mission, only as a high standard of merit is upheld by its rank and file.

In the practice of medicine the highest success depends upon the possession of abilities many and varied, as may be seen by a partial review of the qualities which combine to constitute an all-round physician, and which must be diligently cultivated, both in the seed-time of preparation for practice and throughout the summer season of growing and ripening experience, if one would reap, in the autumn days of full maturity, a satisfying harvest; garnering not alone material products, but also the choice, though imponderable, fruits of respect, confidence and esteem, and the consciousness of having fought a good fight for the betterment of his fellowmen.

In some of these qualities it may be said that the physician "is born, not made," for there are certain innate gifts which peculiarly adapt their possessor for a doctor's life.

(a). Among these a very necessary one is the inheritance of a sound body, endowed with powers of endurance equal to the maintenance of health under unfavor-

*Address of the retiring president of the Jackson County Medical Society, delivered at their annual meeting in Jackson, December, 1905.

able conditions. With the most favoring environment, in a city practice, the general practitioner is subjected to such loss of sleep and irregularity in eating as would give a layman a bad case of "nerves" and dyspepsia; and the country physician, in addition to these discomforts, must undergo much greater hardships, for he must daily drive long distances, in sunshine or storm, oppressed by heat and choked with dust, or freezing in bitter winter nights, now dragging through deep mud or drifting snow, then jolting over frozen hubs which rack every joint and muscle; bearing both bodily fatigue and brain fag. But, whether fresh or wearied, he must be ever alert, in command of all his faculties and having the details of his knowledge and skill in the most accessible brain cells and on his finger tips. The lawyer in court is free to consult authorities, having at hand as many volumes as he will, but what would be thought of a practitioner of medicine who carried about with him the text-books of his art, to which he must refer before prescribing or operating.

Self-denial is the rule of the physician's life, for he holds himself ever subject to the call of the suffering: as the old song has it,

"The doctor's styled a gentleman,
But this, I hold, is humming,
For, like a tavern waiting-man,
To every call he's coming."

The quaint proverb, "keep thy shop, and thy shop will keep thee," applies to the doctor's shop; and, as he is never the master of his time, in order to properly keep his shop he must deny himself nearly all outside duties and privileges, for, even could he leave his work to others, the habit of doing so would soon

show that his shop would not keep him.

Devoting his life to a science and art than which no others are making more rapid advance, the physician must be, all his life, a diligent student if he would hold his place in the current of the stream of progress, and not be swept aside to circle in an eddy of obsolete routine; and the strain of this is increased by the fact that he can find but little time for systematic reading without trenching on his hours for rest.

(b). In mental characteristics the possession of natural talent has especial value, and fortunate is the one blessed with a genius which enables him to readily acquire such qualifications as these, viz.:

(1). A cool head in emergencies, which nothing can surprise into confusion.

(2). Resourcefulness in difficulties, with a confident bearing reassuring to patient and friends.

(3). The habit of minute and comprehensive observation.

(4). The educated touch for purposes of physical examination.

(5). Acuteness in noting symptoms, with clear perception to grasp their significance, and judgment to classify them according to their relative importance.

(6). Promptness of decision.

(7). A true eye and the sense of proportion.

(8). Mechanical skill and deftness in manipulation.

In addition to all this, the physician must be sustained by no little resiliency of body and buoyancy of spirit not to be unduly depressed by the physical strain of sleepless nights; the constant sense of responsibility; the minor notes of distress with which his ears are often filled, and

by the burdens which his heart cannot, for long, roll off, of anxiety for the priceless interests confided to his care; of compassion for sufferers whom his skill cannot cure, and of sympathy in bereavements which he is powerless to avert.

This natural adaptability, though not an absolute "*sine qua non*" of success, since its lack may be partially compensated for by practice, is yet a great help in acquiring the accomplishments which form the rounds of the ladder up which the man of medicine must climb. Whenever the name man is used, it is, of course, to be taken in its generic sense.

Physics is the synonym of natural philosophy, and so, by the derivation of his name the physician is a natural philosopher, or scientist; but by the title of doctor he is also a teacher, and in his dual capacity the administering of remedies falls far short of measuring the field of his activities. His advice and counsel are often the most needed and most useful part of his service, and it is his duty to dispense knowledge as well as medicine. He is expected, like the sun, to radiate light and warmth to dispel the gloom and chill of the sick-room, and by virtue of his office he may come into closer touch with those entrusting themselves to his care than any other can. The sick are like sensitive thermometers in discerning between a warm human interest and a cold self-love in their medical attendants.

By reason of the number and complication of the factors involved, such as mutually-modifying chemical and vital forces, active within the body but not cognizable by the senses; differing temperaments and degrees of susceptibility to both disease germs and remedies, and the invisible and intangible, but

very real influence of the mind over physical processes, medicine can never be reduced to an exact science, but must ever be largely empirical; hence the physician needs to be a profound student of both the lore of recorded experience and the book of natural phenomena. The technical acquirements which make him an efficient ally of Nature's restorative forces must be gathered over a large range, for he who covets the ability to diagnose obscure morbid conditions, reading the language of mutually-reacting physical reflexes and weighing mysterious reciprocal influences of body and mind; then to wisely select remedies, must reap in many fields, studying the situation and structure of parts (human anatomy); the mechanism and functions of organs (human physiology); the composition and changes of substances (chemistry); the nature of abnormal physical conditions (pathology) and deranged mental states (metaphysics), and last, but not least, the entire range of remedial agencies, medical and surgical. It is evident that the pursuit of such studies will be most advantageously made by those who have laid the broadest foundation, and reflection leads to the conclusion that there is scarcely a branch of knowledge, not strictly technical, that has not something to contribute to the building of this foundation.

The increase of knowledge in many lines creates a corresponding increase in the demands made upon the practitioner; in order to keep abreast of the times, he must know more and be able to do more, both in treating his patients and in the way of instruction in sanitation and the care of the sick. His field is a far larger one than formerly, and his equipment should be such as to meet the greater requirements.

Education consists less in the storing of knowledge than in the leading out of the powers of the mind, and the more educative training the medical student brings to his work, the more effectually can he utilize the advantages of the medical school. The wide culture desirable as a basis for great professional attainments can hardly be expected to result from the training of the public school alone. The school courses now carry the student much farther than in the old time, but, as I believe, at the expense of thorough grounding in elementary branches. I have known pupils in a country school who would have put to shame many high school scholars of today in an old-fashioned spelling-match or a competitive trial in arithmetic, geography and grammar. The latter have not been kept long enough upon the milk of knowledge before being fed upon its strong meat; they have been made to grapple with the more difficult problems before the assimilating powers of the mind were sufficiently matured, and the consciousness sufficiently stored with initial truths to render their mastery easy. More has been undertaken than there has been time for, and the result has been crowding, with perhaps its train of overtaxing and impairment of power, a poor preparation for an advance into more difficult fields of labor.

By omitting from the high school grades the smattering afforded of branches which can be pursued with profit only as part of a longer course, filling the space with a better drill in groundwork, and interposing a college course between them and the medical school, extending the time by four years, the whole series would be made easier and more profitable. And it is my conviction that such

arrangement would result in an education of more real value to those who do not advance beyond the high school. To leave the high school at the age of eighteen, the literary college at twenty-two, and graduate in medicine at twenty-six is better than a course completed earlier. The scheme might then be made to include some form of mechanical training and a short business course, both manual dexterity and a general idea of business methods being of practical use to the physician. In truth, the training of the whole public school curriculum hardly more than suffices for learning how to study, for to become a student involves the formation of habits of correct observation; pains-taking research; discriminating analysis, and logical reasoning, habits which have no mushroom growth, but result only from long-continued labor.

The liberal education of college life, embracing, besides study, the rounding effect of rubbing shoulders, mentally, with one's equals; the inspiration of daily intercourse with men of advanced attainments; the stimulus of rivalry; the "esprit de corps" of loyal fellowship, and the mere living in an atmosphere where the chief business is the acquisition of knowledge will amply repay the cost, even if the student must labor with his hands in order to secure it.

Happily, the time has forever passed when the young man who had had only the advantages of the winter district school, and manual training only in the use of farming implements, and whose ambition to study medicine had perhaps been fired by the delusion that the doctor led an easy life, gaining big money and great respect just by driving good horses and visiting about the country, could en-

ter a medical school and, after two years of six months each, achieve his end. Fortunately too, the old-time medical college is only a memory, where, except for six weeks of dissecting, twelve weeks of laboratory work in inorganic chemistry, and a surgical clinic limited by both meagre material and the ignorance of aseptic methods, the teaching was all didactic, and much of it pretty dry at that; the college which sent out men accredited as surgeons who had no clinical knowledge of surgery, and as obstetricians who had never entered a lying-in room. But those schools were the best to be had in the then-existing state of medical knowledge, and were stepping-stones in the march of improvement; and their graduates have filled the fore-front of that march.

Having the option of different combinations of studies, the student may shape his course in college with reference to his future work. The study of physics and analytical chemistry may well be pursued in the literary course, liberating many hours in medical college for the prosecution of advanced technical work.

A good knowledge of one's mother-tongue is of the first importance and it would seem safe to assume that every one who had graduated from a recognized medical college would know how to use his own language in composition and writing; but the following from Dr. Henry Beates, Jr., president of the State Board of Medical Examiners for Pa., shows that such assumption is not always warranted. He says: "The law of Pa. requires the candidate for license to possess a competent common-school education; the diploma of a regularly incorporated medical college is also essen-

tial, and that the diploma is a guarantee of the genuineness of the medical college work is attested by its recognition as a credential by the medical council which grants to such candidate the right to be examined by the board. Let us see how conscientiously the medical college discharges its responsible duties." Two years after the law was in force a candidate presented to the medical council his credentials. These set forth, attested by college authority signature, that the candidate was of good moral character, proper age, possessed of adequate preliminary education, and sufficiently learned in medical science and its art, safely to engage in practice. To the question, "describe a complete physiological revolution of the heart," he answered: "The air entering the lungs cause the action of capillaries to propel the blood through the veins to the heart, through the ventricles to the auricle."

Another qualified candidate answered: "The auricles contract they first fill then have two sounds and one pause then the ventricles fill when the auricles contract then the auricles contract and empty into the aorta." (Not a punctuation mark in this answer.)

Q. "Describe the pathological changes in senile gangrene."

A. "In senile gangrene, the tissue undergo changes by the extravasation of leucocytes and cellular tissue change, which cause death to the part."

Q. "Summarize the function of sweating and explain the office of each physiological factor involved."

A. "The function of sweating are, the kidneys which carry of the sweat that is not gotten rid of through the skin the pores are also means of getting rid of

the sweat and it is also absorbed by the hair follicles."

Another medical graduate wrote: "Wen does the Bord meat and whare."

Q. "Name each anatomical structure involved and describe the changes occurring in tubercular arthritis."

A. "The lungs become involved when the tubule (tubercle?) is contracted it involves the spleen becomes congested, the liver being inflamed."

The physician needs a reading ability in modern foreign languages, since the medical literature found in them suffers loss in translation and, though we boast of the "universal yankee tongue," it is not yet the language of science and medicine. Still more, in my judgment, does the medical student need an intimate knowledge of the so-called dead languages, Latin and Greek. Their study supplies a valuable form of critical discipline, and because their roots largely underlie modern languages, and especially because from them is derived the major part of English technical terms, familiarity with them is of every-day practical use to the student of medicine. Many hard words in the text-books, which to one unversed in Latin and Greek are stumbling-blocks because, being strangers, they must be memorized and attached, like labels, to their respective objects, to the classical student suggest, by familiar sight or sound, their derivation and construction, and fix themselves in his mind by their adaptability to the things for which they stand.

Johns Hopkins and Harvard, I think, require for admission a degree in arts or sciences, and three or four schools demand the completion of the junior year in a literary college, but not in one decade, and perhaps not in several, will it

become practicable to establish this condition throughout the country. But all good work is, in a sense, foundation work, the structures reared by the artisans of one generation becoming the basis of those of the next. It seems reasonable to hope that the American Medical Association, the Association of American Medical Colleges and the American Academy of Medicine, all laboring in the interest of higher medical education, will, in time, secure the adoption of the requirement of a bachelor degree from a four-year college for admission to medical colleges; and in no way, as it seems to me, can they build better for the future glory of Medicine. At the same time, the personal influence of physicians can do much to create in aspirants for the degree of M. D. appreciation of and desire for the best preliminary education. The good of the people and the advancement of our order will be best promoted by the entrance, not so much of more as of better men into our already crowded ranks.

Dr. A. W. Alvord, in his address as president of our state society in 1900, said: "In order to be able successfully to cope with the enormous problems facing the profession for solution, every man entering upon the study of medicine should be already a mental athlete, made so by a thorough drill in a literary college."

I will also quote from a paper read by Prof. Vaughan of Michigan University before the American Academy of Medicine, and its discussion by Prof. Hall of Northwestern University and Prof. Dodson of Rush Medical College. Dr. Vaughan objects to the indiscriminate requirement of a degree of A. B. or B. S. because these degrees have not been

standardized and may mean much or little according to their source, but he is strenuous in demanding the equivalent of the best bachelor degrees for admission, and says: "The best students we have in our schools to-day are college graduates. If my own boys were to study medicine, I would put them through the literary college first."

Dr. Hall says: "Some of the best men who have finished their course at our institution, and who successfully met the ordeals imposed upon graduates in Chicago and other large metropolitan centers, viz., the competitive examinations for positions in hospitals, have been college graduates; . . . they are successful in practice and are forging ahead to-day at a very rapid and encouraging pace. There is no reason to doubt that they will reach a very high place in the medical profession."

Dr. Dodson says: "Culture is the main object. I believe that the average college graduate coming from a four-year school, with such a training in the modern languages and the sciences as is required by Rush Medical College for admission to advanced standing, will turn out a better man at the end of three years of medical training than the average student without such a preparation after five years in the medical school."

But no description of a physician is complete which does not take into account the soul of the man, and the moral fiber of the doctor is often tested. The typical physician is one who has a symmetrical development of his threefold nature. The requirement is not only "a sound mind in a sound body," but this plus a sound moral constitution. Since the body is the instrument of the mind and the mind is dominated by the will, in

an attempt to maintain *constructive* changes in a body and mind under the control of a will undergoing *destructive* metamorphosis the net result can be only degeneracy. No supernatural revelation is needed to show what observation teaches, viz., that, alike in matter, mind and morals, effect follows cause, and that the processes of life work upward toward higher forms; those of death downward toward chaos. The moral nature that pursues the downward course drags down with it the fine physique and the brilliant intellect. We all have seen sad illustrations of this truth in our profession. It is to be hoped that we are outliving the credulous age in which people clung to the drinking doctor, whenever they could catch him sober, through the silly notion that the vice of drunkenness was a mark of superlative ability.

But if the practice of the healing art be followed from purely mercenary motives, and reduced to an exclusively commercial basis, the high ideal is missed, the nobler ambitions having their wings clipped to conform their flight to a low aim.

Long before reaching the medical college the youth should have learned this lesson, viz., that doing right from principle, and being truthful, honorable and generous from the love of truth, honor and generosity, constitutes one of the soundest assets, and one which yields increasing dividends as life advances.

In practice as well as in sentiment, "it is more blessed to give than to receive," and if the good we might do to others be withheld through fear of self-impoverishment, we shall make ourselves, not richer, but poorer.

"There is that scattereth and yet increaseth," and large is the physician's op-

portunity to minister to his own growth by giving freely of the power for good that is in him to the necessities of his fellows. Having entrance through the doorway of suffering into the sanctuary of the heart, it is his to exert an influence for good over many lives; and he who

aspires, like Leigh Hunt's Abou ben Adhem, to be enrolled upon the angel's scroll "as one who loves his fellowmen, when again the angelic radiance shall reveal the names of those whom love of God hath blessed, shall there behold his own in lead of all the rest."

PUERPERAL SEPSIS.*

WM. F. METCALF,
Detroit.

Puerperal infection is wound infection and its prevention demands the most scrupulous care, according to well-known surgical principles; the exercise of such care must be unremitting from the beginning of labor to the end of the puerperium if we are to be certain of results. Vaginal examinations should be carried out only under the same aseptic conditions that would attend a major surgical operation or delivery itself. Bacteria to be sure may be already present in the genital tract, but, in the absence of the gonococcus, the presumption is against the operator who delivers a woman and later has a case of puerperal infection developing as a sequence. Normal vaginal secretion has been shown to be bactericidal, and, while we may reasonably suppose that there is a considerable variation in the degree of this power, yet it is sufficient to protect against any but a recent infection, where the ordinary pyogenic saprophytes are concerned. It is this normal protective function of the secretions which we should aim to conserve to the extent of avoiding the preliminary douche as a routine measure. Rather should such cleansing and anti-

septic means be carried on during the term of pregnancy if there is reason to suspect the presence of any dangerous infection, in order that the condition may be corrected before the onset of labor.

Of prime importance is the sterilization of the hands but of even more importance is it to keep them sterile. A thorough scrubbing or soaking in antiseptics will not protect against the contamination of a casual touch against the clothing or furniture or hangings, in many cases the examining hand cannot safely be allowed to come in contact with the bed-clothing, since among the less intelligent class such will not be provided in a sterile condition. The use of rubber gloves, if intelligently carried out, simplifies the matter of asepsis. They can be quickly changed if contaminated, or re-sterilized by boiling. But their use makes no less imperative the care in sterilization of the hands themselves, since any tear or prick might simply pour in the accumulated mass of infection if this caution were not observed. Again the too common custom of imagining that one has met the requirements if he has periodically dipped his hands into a bowl of a weak solution of bichloride of mercury or other antiseptic, even though there is again and again a breach of

*Read at the Annual Meeting of the Michigan State Medical Society at Petoskey, 1905.

asepsis meantime, cannot be too thoroughly deprecated. Such a burlesque will not much longer serve to deceive the intelligent patient even though it gives the doctor mental rest.

In the routine preparation of the patient for her labor, a general bath should be insisted upon, an enema should be given, and the vulva and adjacent parts thoroughly cleansed and disinfected, after which the vulva should be kept covered with a sterile towel. If there be found pus in the vagina or evidence of gonorrhœal infection, such as redness at the mouths of the vulvo-vaginal glands, and the time for delivery is at hand, the vagina should be thoroughly cleaned with soap and water and a douche of lysol solution. This antiseptic is preferred because it lubricates the mucous membranes rather than leaving them dry. Before the dilatation of the cervix is far advanced the bladder should be emptied and the vestibule finally cleansed. All the bedding and towels provided should have been made sterile and this cannot be depended upon if the physician has not given explicit directions previously in this regard.

When labor is over, perineal tears should be repaired; but it is not my opinion that the most satisfactory repair of the lacerations of the cervix can be effected until the process of involution is nearly or quite complete. A perineal dressing with T-bandage is applied. A vaginal douche is advisable in any case which has called for any kind of instrumental interference, especially where the perineum has been repaired. Ergot, given after the placenta has been expelled, is wise; it favors, by stimulating contraction, the closing of those avenues of absorption which in the presence of infec-

tion doubtless greatly increase the dangers.

All fever must be regarded as arising from infection unless otherwise accounted for. Absorption from the blood-clot may possibly cause elevation of temperature, but from such source this should subside within twenty-four hours. Malaria, in this connection, hardly needs a blood-examination to be excluded. Intestinal intoxication may be determined by the effect of a cathartic.

It being settled that infection is present, we must first detect its point of entrance; and in this effort we should proceed systematically. With the patient in a good light, first examine the vulva and perineum. If evidences of infection are found here, remove any stitches and open the tract freely; cleanse the infected area with soap and water or lysol solution and apply pure carbolic, following this after thirty or forty seconds with a free mopping with alcohol. It will now be safe, after irrigating the vagina, to proceed with the examination of the upper tract. A speculum should be used to see if the infection has entered the cervix. The fingers of the gloved, thoroughly sterilized hand may now be passed into the uterine cavity and any clots or retained secundines completely removed. The entire uterine cavity can thus be explored by pressing the fundus of the uterus with the other hand. Besides noting the contents of the uterine cavity, observe the degree of contractility of the uterine walls. If there has been found no infection in the perineum but much debris in the uterine canal, the removal of which is followed by free flowing and firm uterine contraction, little anxiety need be felt. You are probably dealing with a case of sapremia. The cavity may now be

douched with sterile normal saline solution or one of lysol, 1:250, to clear out the small remaining fragments of debris.

If the condition of sapremia has existed for several days, there may have been engrafted the added infection of the colon bacillus or a staphylococcus pyogenes. Then the flow will not be so free, because there exists an endometritis, the uterine cavity being lined by a surface layer of necrotic tissue, which is filled with bacteria and beneath which is a protective layer infiltrated with leucocytes. If such a condition exist, the evidences will have been observed in the lower tract, either in the cervix or in the perineum. In this class of cases it is proper to use the same methods of treatment as were recommended for the infected perineum. After irrigating the cavity with saline, iodine, or lysol solution, pure carbolic acid or carbolic acid with iodine should be freshly applied to the whole endometrium. The excess of the solution may be neutralized by the subsequent application of alcohol. Following this the cavity should be loosely packed with iodoform gauze. It will be noted that among the substances advised for solution in the irrigating fluid no mention is made of the bichloride of mercury. If this substance is used it should be dissolved in the normal saline solution, as otherwise it merely coagulates the mucus if it is present in sufficient strength to have any action at all.

If in contrast to the above described condition the inner surface of the uterus is found comparatively smooth, the cavity empty, the flow scanty, and the uterine muscle toneless, you are dealing with a case of septicæmia, probably of virulent streptococcic origin. In such cases the protective wall is absent; the

germ and its toxic products travel along the lymph and venous channels toward the broad ligament, the ovaries, and peritoneum, and even into the vascular structures of the lower extremity. Infected thrombi are the result, and emboli becoming dislodged find their way to distant organs and establish new foci of supuration, when we may properly speak of the case as one of pyæmia. In the true septicæmia we are to conceive of the infection as not only freely circulating in the blood-stream but also as having so far overcome the body resistance as to be actively multiplying itself and as a natural result to be pouring out the poisonous bye-products of its own metabolism. The picture presented will vary of course with the degree of resistance of the patient, no less certainly than with the character and the virulence of the invading organism; and mixed infection will naturally complicate the condition.

The purpose of curetting, as well as its limitations, becomes evident in the light of these considerations. In the case of an infection by the streptococcus pyogenes, there is little hope of reaching and eradicating it in any thorough manner by this means but in many cases there will be found clots and other debris which if left would furnish pabulum for the growth and development of added virulence, and it is imperative that such debris be removed. This cleansing of the cavity can in most cases be effected without undue violence to the protective agencies themselves and in a perfectly satisfactory manner with the unaided finger followed by the antiseptic and cleansing measures above described.

What has just been said applies to the infections attending labor at full term. In early abortions forceps or the curette

may have to be used because of the more tightly adherent character of the secundines, and the smaller size of the canal. After the cleansing process is complete, apply antiseptics and pack with iodoform as in the ordinary case.

These manipulations will, in the majority of cases, be followed by a severe chill and subsequent higher temperature owing to the temporary increase of absorption and the rising of the body forces to meet the emergency, but a change for the better should be evident within the next few hours if the measures inaugurated are to be accounted successful. If the drainage continues to be free and the patient improving, the gauze may be left in the uterine cavity for forty-eight hours. Usually by this time it ceases to be a drain because the interstices will have been filled with fibrin, leucocytes, and tissue debris.

If the patient's condition is not markedly improved within twenty-four hours, I remove the gauze; if twelve hours later, the patient is not better, I again irrigate, disinfect, and pack the uterus, and *open the posterior cul-de-sac of Douglas* by a free incision extending nearly from one uterine artery to the other. I then pack iodoform gauze behind both broad ligaments, loosely filling the pelvic cavity.

If I have not seen the case from the first and have reason to think that the lymphatics are extensively involved, I open the cul-de-sac at the first disinfection. Not doing an obstetrical practice myself, most of the cases which I see come under observation at an advanced stage and there is sufficient urgency to demand the radical treatment without delay. The free incision and packing with gauze drains, the lymphatics coming from the infected area, thus protecting the general circulation from a large

measure of toxic absorption. The gauze may be removed from the uterine cavity at the end of twenty-four hours, but that in the cul-de-sac may be left for three or four days or even longer as indicated by the freedom of drainage and the course of the temperature. Twenty-four hours after the removal of the packing from the cul-de-sac, the pelvic cavity and vagina should be irrigated with sterile saline solution, and this irrigation should be repeated frequently enough to prevent absorption from any poorly drained pus-pockets.

If this line of treatment were carefully followed in all cases, I believe there would be few deaths from puerperal infection. Such cases require careful watching; secondary pus-pockets should be promptly opened; pericarditis and endocarditis must be anticipated and suitable treatment early inaugurated; the bladder must be watched to avoid retention; and restlessness should be controlled by the ice-bag applied to the head or tepid sponging or wrapping the patient in tepid sheets. This latter treatment controls the nervous symptoms and at the same time lowers the temperature more effectually and more safely than coal-tar antipyretics. In these cases I never use the latter, but one drug which seems to me of some value in this connection is quinine. Probably by its antiseptic action as well by its check upon dissipation of energy by metabolic excess, its use finds its justification. No medication that disturbs the digestive functions should be considered. Careful feeding and stimulation are most important, and elimination must not be forgotten. Frequent nourishment with easily digested food taken by the stomach and with predigested food by the rectum should be

supplemented by plenty of pure fresh water by the mouth and normal saline fluid by the rectum or injected subcutaneously. Strychnine and whisky find their place as indicated. If there be suppression or marked diminution of urine, the indications are for dry-cupping and the application of heat over the kidneys, the administration of digitalis, and caffeine or diuretin, besides subcutaneous saline infusion.

I have in many cases watched the effect of the antistreptococcic serum but must confess that I cannot recall a case where good effects could be definitely ascribed to it. On the contrary I have observed no ill-effect and so have occasionally permitted its administration because the family physician's faith in its efficacy was

greater than my own. This has given me the advantage of opportunity for observation which on my own initiative I would not have had.

Crede ointment, protonuclein, and the intravenous injection of silver nitrate with the purpose of increasing the leucocytes are measures which look reasonable but of which I cannot speak from sufficient experience to warrant a positive statement.

Of the more radical surgical interference, involving the actual sacrifice of the pelvic organs, I feel that I can speak with assurance born of a considerable experience. I now feel that under the treatment above outlined practically very few cases will be encountered in which the prognosis will not be as favorable without hysterectomy as with it.

INFLAMMATION.*

I. N. BRAINARD,
Alma.

This word comes from *inflammo*, "to set on fire;" and is used to mean "a disturbance of nutrition in the tissues of a part of the body, characterized by prolonged hyperæmia, the emigration of leucocytes through the vessel-walls, the transudation of plasma and lymph, and general proliferation in the area involved."—Wyeth.

In order to get a perfectly clear idea of what inflammation is and what it is not, let me introduce another term and discuss it along side of inflammation, viz., congestion. Congestion is defined as "the excessive accumulation of blood in a part."—Dorland. Blushing is an example. The cutaneous capillaries in the

cheeks dilate under some mental stimulus, and the blood rushes in. The hyperæmia while digesting food; of the brain during study; and of the gravid uterus are other examples. Congestion may be either physiological or pathological.

Physiological congestion is always for some beneficent purpose, and never results in harm to the part congested. This is true in all of the examples given above. Even the hyperæmia of the conjunctiva when a foreign body enters therein, is at first physiological. The blood rushes to the eye to excite the lacrymal gland to an output of tears so abundant as to wash away the foreign body. Succeeding in this, the hyperæmia breaks up, and no harm is done; but failing in this, the hyperæmia continues and anatomical changes follow in the tissues. This is

*Read before Gratiot County Medical Society, Nov. 9th, 1905.

just the boundary line where congestion becomes inflammation.

Pathological congestion is a congestion which has no physiological purpose. It may be either active or passive. *Active* congestion is produced by increased cardiac action, throwing blood into a part faster than it can get out, as in side-ache from running, which is a congestion pain in the liver, if in the right side. Dyspnoea upon lying down is due to a transient plethora of the lung, brought about by the suddenly lessened resistance in the circulation. Dyspnoea may also be due to excessive heart-action, as in tachycardia.

Passive congestion results from an increased resistance to the circulation, as in pneumonia, cirrhosis of the liver, the shrunken kidney of Bright's disease, wasting of the lung in consumption, a string around the finger. But these states are not inflammation.

Every inflammation is preceded by congestion. The small blood-vessels become engorged and blocked—the arterioles the most. The leucocytes, by their amoeboid movements, escape from the blood-paths into the cellular spaces, choke up the tissues, and further interfere with the circulation. "Fluid elements rarely leave the blood vessels during active hyperæmia, but they occasionally do." (Da Costa.) "The wheals of urticaria are thus formed." (Warren.)

Some claim that the migration of the leucocytes is through open spaces in the endothelium of the blood-vessels. Others claim that there are no such spaces, but that the leucocytes pass through holes in the endothelium made for them by their own pressure. As soon as a part is through the rest crawls through by the amoeboid powers of the cell.

The blood-current is slowed by all this outside pressure. The red-cells, which glide the easier, seek the middle of the stream, while the white-cells stick to the walls, and finally stop the flow wholly. Diapedesis then ends.

There appears to be a force known as "chemiotaxis" which attracts the white-cells to the seat of injured tissues. They may also be repelled by very virulent organisms. They hurry to the injured region to carry materials for repair, or to wage war upon invading microbes if that be the cause. Even in the mildest inflammations some white-cells migrate; and in severe inflammations vast numbers pass out.

"Coincident with the clogging of the venules and the emigration of the leucocytes, by reason of the force of the heart's action, the plasma oozes through the walls of the blood-vessels, producing *active* œdema, and a little later pressure on the lymphatic vessels by the mass of newly formed cells causes a transudation of lymph—*passive* œdema—which, mingling with the escaped plasma, coagulates outside the vessels." (Wyeth.) This gives the hardness to an inflammatory swelling.

The signs of inflammation are heat, redness, swelling, pain and loss of function. The heat is due to the hyperæmia. A slight difference of temperature between the inflamed region and the surrounding parts can be detected with the hand, or with a surface thermometer. The temperature in the inflamed region is never higher than the general temperature of the body at the time, though hotter than the surrounding parts. Not every heat is inflammation, as will witness the blood in the hepatic vein, which sometimes reaches 107° F. in a perfectly healthy condition.

The *redness* is also due to the hyperæmia. A non-vascular part, as the cornea and cartilage can not get red. Adjacent parts get red, as the conjunctiva in keratitis. All vascular tissues become more or less red or otherwise discolored. Inflammation of the throat and skin produces scarlet discoloration; inflammation of the sclerotic coat of the eye and of the fibrous coat of muscles produces lilac or bluish discoloration; inflammation of the iris produces brick dust, grayish, or brown discoloration; erysipelas causes yellowish-red discoloration; secondary syphilis causes a copper-hued discoloration, and tonsillitis causes a livid discoloration. A tuberculous ulcer is of a purple hue on the edge. Gangrene is shown by a black discoloration. A scorbutic ulcer is surrounded by an area of violet color. (Da Costa.) Not every redness is inflammation, as blushing.

Swelling is due to the plethora, and to migration of leucocytes, and to cell-proliferation. It is most marked in the loose, cellular, tissues, as about the eyes, scrotum, vulva and glottis. When the effusion is fluid, the swelling is soft. When it is coagulated, the swelling is brawny. Swelling may do great harm. Occurring in the glottis, it may cause asphyxia. Occurring in the conjunctiva, it may cause sloughing of the cornea. Occurring in the prepuce, it may cause gangrene. But not every swelling is inflammation, as in dropsy of the legs. And inflammation may occur without swelling as in inflammation of bone.

Pain is a constant and conspicuous symptom. DaCosta's paragraph on this subject is so good I copy it entire. "It [the pain] is due to stretching of or pressure upon nerves from exudate; to irritation of nerves, or to inflammation of

the nerves themselves, producing cellular changes. Pain is associated with *tenderness* (pain on pressure), it is aggravated by motion and by a dependent position of the part, and it varies in degree and character. In serous membranes it is acute and lancinating, like dagger-thrusts; in connective tissue it is acute and throbbing; in large organs it is dull and heavy, in the bone it is gnawing or boring; in the skin and mucous membranes it is itching, burning, smarting or stinging; in the urethra it is scalding; in the testicle it is sickening or nauseating; in the teeth it is throbbing; and in inflammation under tense fascia it is pulsatile. Pain in inflammation after presenting itself in one form may change in character. If a pain becomes markedly throbbing, suppuration may be anticipated. Pain does not always occur at the seat of the trouble, but may be felt at some distant point. This is known as sympathetic pain, and means that a nervous communication exists between the inflamed part and a distant area, a nerve-trunk referring pain to its peripheral distribution. Tenderness, however, is detected at the seat of trouble." Not every pain, however, is inflammation, as neuralgia and colic. The cessation of pain often means gangrene."

Disorder of function is seen in inflammation of the eye, wherein oversensitiveness to light occurs; and in inflammation of the ear, when slight noises are painful. The disorders due to colitis, gastritis, cystitis, neuritis are all familiar examples. In dermatitis, sweating ceases. In nephritis, the secretion of urine is lessened or stopped. In myositis and arthritis, every movement hurts. Not every disturbance of function means inflammation, as witnesses the vomiting

after pounding the finger, and the cramps in hysterics.

"*Infective inflammations* are such as are set up by the introduction into the tissues of bacteria. Some of these are accompanied by suppuration, as those caused by the cocci; and some are not, as erysipelas, tetanus, hydrophobia, syphilis, diphtheria. In general, suppuration is the sign of bacterial infection. *Surgical* (septic or bacterial) pus does not coagulate. Pus-serum, although furnished from the vessels of the inflamed area, is prevented from coagulating by the liquefying action of *bacterial peptone*, a product of bacterial ferment and decomposition.

* * *

"Certain sterilized chemical substances, as well as sterilized bacteria, will when injected into the tissues, cause inflammation and a liquefying of the exuded plasma, and connective and embryonic tissues with which they come in contact, and produce a creamy liquid which very closely resembles *true surgical pus*. The inflammatory process, however, is mild, and systemic infection does not occur. Surgical writers have termed this 'laboratory pus.'" (Wyeth).

Constitutional Symptoms.—Fever.—This is a constant symptom. "It arises, in non-septic cases, from the absorption of aseptic pyogenic exudate, and in microbial inflammations from absorption of pyogenic toxic products of bacterial origin.

"In strong and healthy persons this fever, when not septic, is characterized by a full and strong pulse, flushed face, coated tongue, dry skin, nausea, constipation, and probably by acute delirium. In broken-down and exhausted individuals an ordinary inflammation, and in any in-

dividual a bacterial inflammation may cause a fever with typhoid symptoms." (DaCosta.)

The blood of one suffering with an inflammatory fever shows some peculiarities. It clots more firmly when shed, and the coagulum sinks more readily. On the surface of the blood a layer of leucocytes forms in the liquor sanguinis, because these sink less rapidly than the fibrin and the rubrocytes. This constitutes the "buffy coat." Their numbers are greatly increased in inflammations in order the more successfully to wage their war against the bacteria and toxins.

Results of Inflammation.—The rapid transudation of serum through the capillary walls in such cutaneous inflammations as sunburns, steamburns, strong counter-irritation, etc., result in blisters. Other cutaneous irritations result in the transudation of lymph, as in the pock of variola, and still others in pustules and ulcers. Inflammations of mucous surfaces result in catarrhs and ulcers. Inflammations of serous surfaces result in the transudation of lymph and the formation of plastic adhesions. Inflammations about solutions of continuity in flesh result in the development of granulation tissue, the filling in of gaping wounds, and cicatrization. Solution of continuity in bone is followed by the escape of blood and lymph, and the formation of callus. Inflammations of synovial tissues result in ankylosis. Inflammation of nerve tissue ends in paralysis and atrophy. Other results of it are gangrene and necrosis.

So long as an inflamed surface is kept aseptic no suppuration follows, but infection taking place, suppuration follows. Often devitalized tissues in breaking down and liquefying produce an aseptic

fluid called "laboratory pus," free from bacteria and the power of infection. Many times I have opened such pockets of aseptic pus. I do not fear it. But often an interior pocket of pus is septic from the start, it having been incited by some bacterium floated in on the blood-stream or lymph-stream, or carried in by some missile. Pus in soft tissues is walled off by a host of leucocytes which, by the law of chemiotaxis, have rushed to the infected area, surrounded the offender, and engaged in their phagocytic warfare upon it. They plug the tissues full and make what is called the "pyogenic membrane"—reminder of a faulty conception.

Treatment of Inflammation.—The first thing to do is to remove the cause. "If this cause is a splinter in the part, take out the splinter; if it is a foreign body in the eye, remove the foreign body; if urine is extravasated, open and drain; take off pressure from a corn; pull out an ingrown nail, remove microbes from an infected area by exposing, irrigating and applying antiseptics.

* * *

Rest.—Physiological rest is of infinite importance, and is always indicated in acute inflammation. In the exercise of function, blood is taken to a part, and an existing inflammation is aggravated. Further, Billroth has pointed out, rest prevents the dissemination of infection, because motion exposes fresh surfaces to inoculation and breaks down protective barriers of leucocytes. Its principles were first studied by Hilton. The means of securing rest differ with the structure or the part diseased. When rest is used, do not apply it too long. *Rest in bed* diminishes the amount of blood sent to the inflamed part and lessens the force

of the circulation, hence it antagonizes stasis. It has been shown that the heart beats at least fifteen times per minute less when the patient is recumbent than when he is erect. The saving of strength and the benefit to the local condition are thus seen to be enormous. In fact, the heart saves at least 21,000 beats a day. In every severe inflammation insist on the patient going to bed.

"In *cerebral concussion* rest must be secured by quiet, by darkness, by the avoidance of stimulants and meat, by the application of ice to the head, and by the use of purgatives to prevent reflex disturbance and the circulation of poisons in the blood. In *inflamed joint* rest must be obtained by proper position, associated in many cases with the adjustment of splints or plaster of Paris, or the employment of extension. In *pleuritis* partial rest can be secured by strapping the affected side with adhesive plaster or by using a bandage or a binder to limit respiratory movements. In fractures nature procures rest by her splints—the callus—and the surgeon procures rest by his splints—firm dressings or extension. In *cancer of the rectum* and intractable rectitis, a colostomy secures rest for the inflamed and damaged bowel. In *enteritis* opium gives rest to the bowel by stopping peristalsis. In *cystitis* rest is obtained by the administration of opium and belladonna, which paralyze the muscular fibers of the bladder. The use of the catheter gives rest to the bladder by removing urine. A cystotomy allows complete rest by permitting the bladder to suspend its function as a reservoir of urine. In cystitis from *vesical calculus* rest is obtained by cutting or crushing the stone. In *inflamed mucous membrane* rest from the contact of irri-

tants is secured by touching the membrane with silver nitrate, which forms a protecting coat of coagulated albumen. Opening an *abscess* gives its walls rest from tension. In *inflammations of the eye* light must be excluded to obtain complete rest, but tolerably good rest is given in some cases by the use of glasses of a peacock-blue tint. In *aneurism* the operation of ligation cuts off the blood-current and gives rest to the sac. In *hernia* the operation gives rest from pressure." (DaCosta.)

An inflamed part should be elevated, if practicable, to drain away from the injured tissues. Blood-letting by punctures and scarifications is helpful. Leeching and cupping help. Tincture of iodine sometimes does much good. The actual

cautery sometimes gives brilliant results. Ichthyol in 25 to 50% ointment is highly recommended. But better than everything else except rest is *cold*, this may be applied wet or dry—preferably dry. Do not continue it too long. Douche inflamed cavities with *hot* water. Hot fomentations and poultices often relieve colic or neuralgic pains.

Among the remedies indicated for the *general treatment*, we may mention aconite, veratrum and gelsemium as arterial sedatives, calomel and the salines for catharsis; Dover's powder, acetanilid, hot drinks and heat for diaphoresis; citrate of potash, sweet spirits of nitre and copious drafts of water for diuresis, and opium for pain. The various serums and antitoxins act by increasing the number of the leucocytes.

DISORDERS FROM EYESTRAIN.*

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Ann Arbor.

Notwithstanding that much has been presented upon this subject, it is a lamentable fact that a large percentage of the medical profession fail to appreciate the nature and consequences of eyestrain. Thousands of patients are annually being subjected to a medicinal treatment of reflex disorders, arising from eye-strain, while the etiological ocular defect remains unappreciated by both the patient and his attending physician. Fortunately, this state of affairs does not obtain throughout the profession. Scattered here and there, like cases in a desert, are physicians who, having personally suffered (like the writer) from the tortures of ocular defects or intelli-

gently observed them among their clientele, are appreciative of their significance and rational treatment. When it is found upon investigation, however, that a large majority of text books and monographs upon internal and nervous disorders are silent as to the importance of eye-strain in the production of neurogastric diseases it is small wonder that the etiological ocular defect is so often unappreciated by the general practitioner in the treatment of these disorders.

The usual symptoms of eye-strain may, for the sake of brevity, be grouped under three headings. Phenomena of (a) muscular asthenopia, (b) conjunctival and retinal irritation, (c) defective vision. With the former condition, the patient complains of pain or pulling sensation within the orbital cavity, temporal or

*Read at the Annual Meeting of the Michigan State Medical Society at Petoskey, 1905.

frontal regions, or within the eye-ball itself, which is due to an abnormal tension of either the extraocular or oiliary muscles or both. With irritation of the conjunctiva, however, the eye-ball and lids become injected, aggravating any existing acute or chronic inflammation of the lids, and attended with a hyperlachrymation which may be so pronounced as to stimulate epiphoria due to stenosis of the lachrymal duct. The symptoms of asthenopia, irritation, and blurring of vision may obtain constantly or only upon doing near work, but are usually accentuated by a close application of the eyes, e. g., sewing or reading. Aside from myopia, normality of sight does not exclude the existence of refractive errors, especially the more moderate degrees of hypermetropia and astigmatic conditions, particularly in the young who enjoy the necessary accommodative power to overcome the defect. With the advent of presbyopia, however, when the accommodation becomes physiologically reduced, the refractive error may become manifest with a lowered distant vision. So far as symptoms are concerned, furthermore, it is impossible to differentiate an imbalance of the extra-ocular muscles from an error of refraction, excepting when an extra-ocular muscle becomes so weakened that it can no longer cope with its opponent, when a diplopia occurs or it is corrected by an inclination of the head. Sensations of dizziness and nausea frequently obtain as a result of these conditions, although they may also be produced by astigmatic conditions, particularly when the axes exist at oblique angles.

The normal eye often tires with a physiological amount of work; but when a prolonged effort is made to employ a

defective visual apparatus, the task becomes not only unpleasant, but oftentimes distressing to a marked degree with more or less reflex disturbances, depending upon the nature and extent of the ocular defect, together with the systemic condition of the individual. Hence, a muscular or refractive defect which produces few or no symptoms in one instance may so affect the health of another person that a serious impairment of the vital functions occurs. The heart, which we are wont to regard as unceasing in its work, enjoys a longer period of rest than activity; but in instances of eyestrain, the correcting muscles are under a constant tension during all the hours of visual activity. So long as there obtains a sufficiency of reserve force to supply this continued expenditure of nervous energy, the symptoms are latent, but finally in many instances an exhaustion occurs, accompanied by manifestations of a varied symptomology.

It is to the importance of these systemic disturbances resulting from eye-strain, therefore, that I wish to specially direct your attention for a brief period. As previously indicated, these disorders are so varied, complex, and oftentimes pronounced that the symptoms of the causal ocular defect are quite unappreciated, in many instances, by both the patient and his attending physician, until by accident or design the etiological condition is recognized and corrected. Thus it is that the ophthalmologist frequently meets with instances of chronic headache, migraine, gastric disorders, neurasthenia, insomnia, epilepsy, chorea, and hysterical conditions which have resulted wholly from eye-strain and continued in spite of the medicinal treatment which has been so erroneously employed, but have ob-

tained permanent relief after the correction of an ocular defect.

To briefly illustrate the validity of my contentions in this direction, I beg to append a few characteristic instances of reflex disorders which have often been encountered in my practice as an ophthalmologist.

Case 1. Mrs. H. W. W., aged 35 years, presented the following history: Since childhood, she had suffered from nearly constant headaches and a nervous condition. Has employed the advice of several physicians but without relief. Finally concluded that trouble originated in eyes, inasmuch as near work increased her symptoms. Consulted a prominent oculist who gave her the following lenses for constant use: O. D. $+ .50 + .25 \times 90$, O. S. $+ .75 \times 90$. Obtained only partial improvement. Finally she consulted me when an examination of eyes revealed the following refractive condition: O. D. $-.25 + .75 \times 90$, O. S. $-.37 + .88 \times 90$. Since wearing this correction, she has enjoyed a complete cessation of headache and an improvement in general physical condition during the past two years without the use of internal medication.

Case 2. Miss G. M., aged 30 years, for several years has complained of constant and intense headaches, pain in eyes, and nervous symptoms. Had received medicinal treatment from several physicians without avail. An examination of eyes showed the following conditions: O. D. $+ .50$, O. S. $+ .25 + .25 \times 90$. Right hyperphoria, 2 degrees (tendency of right eye to turn upward). Glasses were prescribed to be worn constantly with which the muscular imbalance was corrected as well as the refractive defect. During the following year, she informed me that the former symptoms had entirely disap-

peared; but a year later, the symptoms began to return when an examination showed that the hyperphoria had increased to 4 degrees, for the permanent correction of which I advised a graduated tenotomy; but this was declined, so the former prismatic correction was increased to meet the condition, since which time she has not come under observation.

Case 3. Mr. P. B. J., aged 25 years, presented history as follows: Constant dull frontal and occipital headaches, pains within the orbits, loss in weight, and pronounced nervous symptoms which were increased by a prolonged use of the eyes. Riding upon the cars, attending the theater, or watching rapidly moving objects invariably increased the above symptoms, attended with a sensation of nausea. Had tried various general practitioners without permanent relief. Was wearing O. U. $+ .50$ sph. An examination of eyes revealed the following conditions: O. U. $+ .50 \times 90$, and 12 degrees of esophoria (tendency of eyes to turn inward). Advised a tenotomy of both internal recti which was accordingly performed, leaving but 1 degree of imbalance. So great was the relief afforded by the operation and correction of astigmatism that the patient was enabled to follow with comfort his clerical work, and rapidly gained in vigor and weight, without the aid of medication.

Case 4. Mr. G. S. M., aged 31 years, consulted me, presenting the following history. Headaches, neurasthenia, marked insomnia, and gastric disorders. During the previous ten years, he had consulted several general practitioners and oculists regarding his condition; but had obtained no permanent improvement. To account for the symptoms, one physician informed him that he had "congestion of the

brain," while an equally mistaken prominent oculist corroborated this diagnosis because a "retinitis" was found to exist! Examination of his ocular condition revealed to me the following conditions: O. D. + .25 + .25 \times 90, O. S. + .50, and 18 degrees of esophoria. When I informed him that, in my opinion, his condition was due largely if not wholly to the imbalance of his extra-ocular muscles, he was astonished as none of his medical advisors had suspected or made a test for imbalance of his ocular muscles. I advised tenotomy of both internal recti which was performed. Although previous to the operation and wearing of correction for his refractive error he was particularly distressed by insomnia, during the past two years he has frequently expressed his gratitude for the great relief afforded him; and is now carrying on his multitudinous duties with satisfaction.

Case 5. Mrs. M. S. W., aged 35 years, presented the following history: Since childhood patient has been subject to periodical headaches which she regarded as hereditary inasmuch as her mother and an aunt had suffered similarly. During the past few years, she has complained of heart trouble, dyspepsia, marked constipation, and periods of extreme nervousness. While suffering from an attack of headache, an uncontrollable nausea and vomiting would occur which so exhausted her strength that she was often compelled to keep her bed for several days. Several physicians had been consulted regarding her condition, but no permanent relief was obtained. Finally her refractive symptoms became so evident that she was led to consult me regarding her ocular defect. Examination revealed the following facts: O. D. — 1.00 + 2.25 \times 60,

O. S. — .75 + 2.25 \times 120. Normal balance of extra-ocular muscles. The above correction was prescribed to be worn constantly. Although she experienced in the beginning some difficulty in wearing the glasses, she soon became accustomed to them, and although several years have elapsed since this defect was corrected, she has enjoyed a complete cessation of her former distressing symptoms.

Case 6. J. R., aged 43, presented the following history: During the past ten years, he has suffered frequently from periods of nervous exhaustion, gastric disorder, constipation, and a marked insomnia, which of late have become more pronounced in spite of the advice and treatment of several physicians. Being a man of broad scientific attainments, he had come to the conclusion that possibly his symptoms might originate from an eye-strain; and accordingly consulted me in regard to his condition. An examination of the eyes showed the following conditions: O. D. + 1.00 + .25 \times 180, O. S. + .75 + .25 \times 180, 1 and $\frac{1}{2}$ degrees of left hyperphoria and 2 degrees of exophoria (tendency of eye to turn upward and outward). Glasses were prescribed to be worn constantly, correcting both the refractive and hyperphoric conditions, while prismatic exercise was advised for improvement of the internal recti. A marked improvement in both the ocular and systemic disorders was obtained thereby, but a couple of months later, he again consulted me, stating that he was still conscious of some strain in the use of his eyes. A further test of his muscular condition revealed the fact that the hyperphoria had increased another degree while the exophoria had disappeared. Being persuaded that my patient was suffering from a latent hyperphoria,

I gradually increased the prismatic correction in his glasses until the imbalance became stationary at 4 degrees, when I advised a tenotomy of the left superior rectus to permanently correct the defect. At a subsequent date, the operation was performed, leaving only $\frac{1}{2}$ degree of hyperphoria while the lateral recti were in balance. The cessation of his former systemic symptoms under this treatment was interesting and gratifying, both to the patient and myself. While previous to the correction of his ocular defect, he was confined strictly to a simple diet of bread and milk and suffered greatly from his insomnia, in the course of a few weeks he was able to relish an ordinary mixed meal, his bowels became more regular, the insomnia disappeared, and a rapid increase in weight was observed.

Case 7. Mr. H. M. G., aged 28, presented the following history: During the past ten years, he has been suffering from headaches, gastric disorder, and nervous symptoms. While in college some six years ago, his symptoms became so marked that he was compelled to abandon his work. He placed himself under the care of several physicians; but obtained no relief until by accident he learned from a fellow student who had had a similar experience that possibly his physical condition was due to an ocular defect. He accordingly consulted a prominent oculist who gave him for readingly only $+1.00 + .50 \times 90$ from the use of which he obtained some relief. After wearing this correction for four years, he came under my care, when an examination of his eyes showed the following condition: O. D. $+ .25 + 1.00 \times 90$, O. S. $+ .37 + 1.00 \times 90$, and a slight exophoria (tendency of eyes to turn outward). He was instructed to

wear this correction constantly, since which time his symptoms have entirely disappeared as evidenced by his robust physical condition. No medication has been employed since wearing of glasses.

Case 8. C. A. H., aged 26, gave the following history: Previous to entering college, he had passed the greater part of his life in out-of-door pursuits, but during the past two years since devoting himself to study, his health has gradually failed until now he complains of a drawing sensation about his head, dizziness, gastric disorder, and a marked nervous condition. No definite refractive symptoms. Has consulted several physicians without obtaining permanent improvement. An examination of his eyes showed the following conditions: O. D. $+ .25 + .62 \times 90$, O. S. $+ .25 + .50 \times 90$, and 3 degrees of exophoria. Prescribed above glasses to be worn constantly in addition to which I advised the employment of prismatic exercise for the improvement of his weakened internal recti. Within one month, he had noticed a marked betterment in his physical condition which, without the use of internal remedies, continued to so improve that he was finally enabled to pursue his professional course of study with satisfaction.

Case 9. Miss E. S., aged 16, presented a history as follows: Since six years of age, has had indistinct vision for distance which has gradually become worse, attended with a rolling of eyes, twitching of lids, and spasmodic contortions of the face and shoulders. These have become so frequent and pronounced that she avoids society. Examination of the eyes revealed the following conditions: O. D. $-3.00 - 1.50 \times 180$, O. S. $-3.00 - 2.00 \times 180$, and 1 degree of left hyperphoria. She was instructed to wear the

above correction constantly in which the muscular imbalance was also remedied by deceneration. In the course of year, without the use of any medication, the above symptoms had practically disappeared, she had markedly gained in weight, and considered herself cured. Two years later, however, she began to notice an irritation of the eyes, a blurring of distant vision, and some twitching about the eyes. Examination showed following conditions: O. D.—4.00—1.25 \times 180, O. S. — 4.00 — 2.25 \times 180, and 3 degrees of left hyperphoria, instead of as above. With the correction of these defects, the symptoms again disappeared in the course of a few months.

Case 10. Mr. C. L. C., aged 28, gave the following history: During the past five years, he had complained of pulling sensations in his eyes, feeling of constriction about the head, gastric disorder, and a marked nervous exhaustion which terminated in an acute attack of melancholia. During the past six months, he has been unable to use his eyes in reading. Examination of the ocular condition revealed the following: O. D. + 3.00 + .88 \times 90, O. S. + 2.00 + .75 \times 90, and 4 degrees of esophoria. A partial correction was prescribed for constant use, and gradually increased until he was able to employ the full correction. In the course of a few months, his former symptoms practically disappeared, and he was enabled to carry on his former occupation with satisfaction. Occasionally he would notice a return of some of his symptoms, but these were readily traced to a malposition of his lenses before the eyes.

In conclusion, I wish to emphasize the fact that the foregoing illustrative cases of eye-strain are not rare in occurrence

nor are the reported favorable results of ocular treatment exceptional, but are frequently being encountered and successfully treated by those ophthalmologists who are doing thorough, scientific, and conscientious refractive work. In contradistinction to these facts, however, I am sorry to admit that there is an alarming amount of humbuggery practiced in the "fitting of glasses." In making several thousand examinations of the eyes, I have found that over 90 per cent. of refractive errors are astigmatic, one quarter of a diopter or more, while 50 per cent. of the lenses prescribed from various sources are merely spherical. In other words, probably 75 per cent. of the glasses worn to-day do not accurately correct the ocular defects of the wearer, not taking into consideration muscular imbalances. When it is remembered, however, that the greater percentage of these glasses are nished by pseudo-specialists, "jewelers and opticians," "optical specialists," "doctors of optics," "optical companies" and quacks in general whose chief equipment consists of gross pretensions, aggressiveness, and the ubiquitous sign,

"EYES EXAMINED FREE,"

whereby the gullible and credulous are led to believe that they are getting something for nothing, it is small wonder, indeed, that the anticipated results of ocular treatment are so frequently unrealized, and that the uninformed laity and indiscriminating physician often confuse the claims of the ophthalmologist with those of the pseudo-specialist.

It is gratifying to note, however, that during the past few years an increasing interest and broader knowledge has been exhibited by the medical profession in the diagnosis and rational treatment of eyestrain. Even in the conservative medical centers of Europe, as I recently learned in an extended tour of her hospitals, considerable importance is being attached to ocular defects in the production of neuro-gastric disorders, but there is plenty of room for improvement in this direction, both at home and abroad.

ECTOPIC PREGNANCY.*

E. C. TAYLOR,
Jackson.

I desire it to be understood in the beginning that I have no intention of presenting to this meeting a long winded text book essay on extra-uterine pregnancy, but to very briefly bring out some practical points on a condition with which I have been brought in close contact several times recently, and from which I believe I have gleaned some practical ideas and I expect some of you will take issue with me on my position.

There are some conditions incident to the details of the operation for extra-uterine pregnancy, which necessarily differs in technique from all other pelvic operations and such differences as I may point out will be my excuse for this paper.

By ectopic pregnancy I mean of course all gestations taking place outside the uterine cavity. Actually, that does not leave a very large field in which such gestations do really occur, for the old idea that gestation ever does or ever did take place upon the peritoneum has passed into a state of innocuous desuetude. Rather authentic cases of gestations originating in the ovary have been presented, but personally I must be "shown" before I will believe it. Such being the case it leaves only the tube in which such gestation can and does occur; we might as well limit our scope and simplify the pathology by calling it tubal pregnancy, for that is what it really amounts to, even though there be a rudimentary horn in a bicornate uterus and pregnancy occurs therein.

Tubal pregnancy was formerly regarded as of very rare occurrence. Now, we are frequently coming in contact with these cases. The question naturally arises, are they becoming more frequent or are we becoming wiser and better able to properly diagnose them. And in this connection I want to repeat a statement made by me at the last meeting of the State Society. That, in my opinion, practically all of the so-called pelvic hæmatoceles of which we formerly heard so much were due to rupture of the gestation-sac of tubal pregnancy. Personally I take very little stock in the pelvic hæmatoceles theory from other causes. When I expressed myself in a similar vein at the Petoskey meeting a couple of my friends of reputation immediately had a fit, and one of them after adjournment of the session came to me and said, "I am surprised that a man of your judgment and experience should make such a statement publicly." But on my return I proceeded to look up the recent literature on the subject and I find many of the best men in this country take the same position, and this is a mighty important point let me tell you, for I have known two or three of these cases to be diagnosed as hæmatoceles and operations delayed (on the supposition that the clot would be absorbed) until a septic condition had developed. The first case I ever had resulted in death when life could easily have been saved, but for the persistency of a consultant in fighting off an operation. It is very generally conceded that in a large proportion of cases normal fertilization takes place in the fallopian tube; this being the case, the only

*Read at the Annual Meeting of the 11th Councilor District Medical Society at Big Rapids, December, 1905.

wonder is that in more cases the impregnated ovum does not become lodged in the tube from delay in passing into the uterus. It is a fact that tubal pregnancy is most common after long periods of sterility and if such sterility was due to chronic salpingitis which produced thickening of the tube and promoted or delayed the discharge of the ovum, either pregmated or unimpregnated, it would probably explain the fact that tubal pregnancy occurs oftener from causes producing sterility than from sterility itself.

The theoretical predisposing causes of ectopic pregnancy as given by the writers, are briefly:

1st. Inflammations of the fallopian tube which cause

(a) Denuded patches and desquamation of epithelium;

(b) Loss of peristaltic action of the tube;

(c) Cicatricial contraction of the tube.

2nd. An abnormal tube. Long, tortuous, with small lumen.

3rd. New formations in and around the tube.

4th. Torsion of the tube.

5th. All conditions giving rise to sterility of long standing.

In the main, the above covers the ground fairly well, but I believe there are other co-operating causes.

Briefly simplifying the development and course of tubal gestation, as the foetus enlarges the course of gestation will be modified in one of the following ways.

1st. The foetus, if near the abdominal opening of the tube and expulsion occurs before the eighth week, may be thrown out through that opening into the abdominal cavity without rupture of the

tube and this is called tubal abortion, and parenthetically let me say these are the cases that are most likely to be diagnosed as pelvic hæmatoceles.

2nd. The tube may rupture and partly or wholly discharge the foetus into the abdominal cavity or into the space between the broad ligaments, or if the ovum is lodged close down to the uterus, it might rupture in such a manner as to be discharged therein. I suppose it is possible for the foetus, if low down in the tube to go on to term. As I have before said, tubal abortion must occur before the eighth week as the abdominal opening closes after that period, but tubal rupture may occur at any time, most likely during the second month; less frequently thereafter. The feature of this condition however, which interests us most is the diangosis, if possible, before rupture has occurred, and if not then as soon as possible thereafter.

I have found by experience in these cases that no set of symptoms is reliable, each case presents something new to befog the diagnosis and an early diagnosis often depends largely upon your former knowledge of the patient's history, as to the presence or absence of any chronic pelvic disease, of her menstrual history, etc. With the assistance of that knowledge your diagnosis is often very easy and sometimes positive, but as a rule you may suspect this condition, but still be mightly uncertain. We have operated fourteen of these cases in Jackson in the past eighteen months, nearly all drawn from our own city and county and these have all occurred in the private and consultation work of four men, viz.: Dr. D. E. Robinson, myself, Dr. J. C. Kugler, and Dr. Roy Chivers, numerically in the order given. I am more or

less familiar with a majority of these cases and I can safely say that not in one of them was a positive diagnosis made prior to the making of an exploratory incision and in one case at least not a supposition of the true condition existed. A diagnosis of appendicitis having been made and the operation for appendectomy begun, when upon getting into the abdomen the operator was con-

fronted with a cavity full of blood and it was some time before he found out where he was at. So far as my knowledge goes no writer has given so full and complete a differential diagnosis table as has Dudley in the last edition of his admirable work, and with slight changes I here with present it as it covers the ground of diagnosis in the briefest possible manner.

Ruptured tubal pregnancy.

1. No initial history of infection.
2. Great rapidity of pulse.
3. Temperature at first subnormal, later may be elevated.
4. Pain excruciating, but subsides after few hours.
5. Symptoms of hemorrhage:
 - (a) Sudden, acute anaemia.
 - (b) Weak, rapid heart.
 - (c) Dyspnoea.
 - (d) Sighing respiration.
 - (e) May be syncope.

Ruptured tubal pregnancy. Haematocele.

1. History of pregnancy.
2. Sudden onset.
3. Hemorrhage may cause collapse.
4. Temperature normal or subnormal at first.
5. Usually mass soft; later hard.
6. Fever may finally follow appearance of haematocele.
7. Uterine decidua.
8. No leucocytosis at time of rupture.

Ruptured tubal pregnancy. Haematocele.

1. Urgent symptoms at onset.
2. Development rapid.
3. Not very sharply circumscribed.
4. Immobility of mass.
5. Signs of pregnancy precede formation of mass.
6. Uterine decidua.

Ruptured tubal pregnancy. Haematocele.

1. No pre-existing tumor.
2. History of pregnancy.
3. Tumor not soft and tense.
4. Uterus somewhat enlarged.
5. Uterine decidua.

Tubal pregnancy.

1. Before rupture, gestation-sac harder.
2. Fluctuation and ballottement absent.
3. Uterus slightly enlarged. Tumor separate from uterus and crowds it to opposite side of pelvis.
4. Unusual history.
5. Tubal abortion, or rupture between fourth and ninth week usual.
6. Discharge of uterine decidua with false labor-pains occurring usually at time of tubal abortion.

Ruptured pyosalpinx.

1. Initial history of infection.
2. Pulse not so rapid.
3. Rise of temperature marked from onset.
4. Pain less intense but continuous.
5. Usually absent.

Pelvic peritonitis and cellulitis.

1. History of infection.
2. Onset less sudden.
3. No hemorrhage.
4. Temperature elevated.
5. Usually mass hard; later may soften.
6. Precedes.
7. Absent.
8. Always leucocytosis in early stages.

Uterine and ovarian tumors.

1. Absent.
2. Slow.
3. Mass sharply circumscribed.
4. Mobility usual.
5. Absent unless complicated by pregnancy.
6. Absent.

Hemorrhage into ovarian cyst.

1. Pre-existing tumor.
2. Absent.
3. Tumor smooth and tense.
4. Not so much enlarged.
5. Absent.

Normal pregnancy.

1. Uterus softer.
2. Fluctuation and ballottement later.
3. Tumor is enlarged uterus.
4. Nothing unusual in history.
5. Does not occur.
6. Does not occur.

Two of the three cases I have recently operated are so typical of their class that I will give a brief history.

Case 1. Mrs. P., age 32, a strong, healthy young woman, a resident of a neighboring town, had consulted me about nine weeks previous for sterility, giving the following history: Had been married twelve years, four months after marriage became pregnant and aborted at five months, without any known cause. Ten months later became pregnant again and acting under the advice of her father, who was a physician, every possible precaution was taken to prevent a second miscarriage, but at six months period she again aborted, since which time she had not become pregnant, but was very anxious to bear children. She assured me that her menstruation had been unusually regular, but scanty, thick and very dark in color, free from pain at all times with no loss of sexual powers. Upon a most thorough and careful examination I failed to find anything abnormal with the pelvic organs. There being some stenosis of the cervix I dilated gently a couple of times, and her menstrual period being at hand, prescribed permanganate of potash pills gr. 1, three times daily to be taken for thirty days, with absolute freedom from sexual indulgence, until after next menstruation, then sent her home.

These instructions were religiously carried out. I was informed that the next menstruation, following the month's administration of permanganate had been much more copious, and I was not greatly surprised to receive a letter about five weeks later to the effect that she had passed her menstrual date without menstruating and her fondest dreams were apparently to be at last realized.

About ten days later I was called to see her with her family physician who informed me that about a week previous she had gone out of town to spend Sunday and upon arising from bed on Monday morning, she had been taken with a sharp pain in the left iliac region and almost immediately began to menstruate scantily; the pain continued, but with less severity all the morning, during which time she had taken the train and gone home. Upon her arrival he had been called, and without attempting a specific diagnosis administered a hypo of morphia and left the house, but was within an hour, again called hastily because of the return of the pains, he arrived just in time to hear a terrific scream of agony on the part of the patient, followed by collapse and syncope. She became blanched, cold and pulseless, the heart beats scarcely discernible for over an hour and only by the most heroic efforts was she prevented from dying from shock. A few hours later he discovered a semi-solid mass in the left lower abdomen. He, together with other local physicians, made a diagnosis of "pelvic hæmatocele" which possessed the merit of being safe, but after waiting ten days for its absorption and finding the mass growing more solid all the time and the patient with an afternoon temperature they decided to call me. I was almost positive of my diagnosis in this case, and upon operation the next day it was clearly confirmed. A large, single, semi-organized clot was found, together with many small ones and a slight hemorrhage still going on from the abdominal extremity of the tube. An enormous amount of blood had been lost, the abdominal cavity being nearly full.

This was a case of tubal abortion with

only slight laceration of the tube, and although this is the type that we are told causes less shock and hemorrhage than any other, both were greater in this case than any other I ever saw.

Case 2. Mrs. B., age 28, strong, vigorous and healthy, young woman, mother of two children, girl age five, boy age three, consulted me for irregular, sluggish and scanty menstruation. Pelvic organs in fair condition, except slight laceration of cervix and perineum which I advised repairing, which she was not quite ready yet to have done. Here again I prescribed permanganate of potash pills gr. one, three times daily for a month with the result of a much improved menstruation in quantity and it came at the proper time. The next menstruation was scanty again, as was also the second which did not cease entirely and a good deal of pain was complained of in the left ovarian region, although well enough to visit in the western part of the state for ten days of this time. A physician was called in, who diagnosed a probable salpingitis after making an examination. She returned home and I was called at once, as the trip to Jackson had apparently aggravated the trouble. I found the abdomen greatly distended from peritonitis, which was quite general, but greatest tenderness in left lower abdomen. A slightly bloody uterine discharge, but too much tenderness to permit anything like a thorough examination. Was called again in the night, because of a fainting spell which frightened the family greatly. I learned that previous to this, the patient had arisen from the bed hastily because of a severe paroxysm of pain in the iliac region and sitting on a chair collapsed. I found such

evidences of hemorrhage and pronounced shock that my suspicion was aroused.

I had her taken to the Jackson City Hospital the next morning, and the next day taken to the operating room where a thorough examination was made by myself and Dr. D. E. Robinson. We both became reasonably certain of an ectopic pregnancy, and upon making an exploratory incision the following day, I found just what I expected, an abdomen full of blood, much of it in small clots, and upon carefully removing the larger ones I found lying upon the bowels a perfect, two and a half months foetus, with a minature cord still attached. On getting down to the tube, I found it enormously distended, as large as the powder horns of our grandfathers, with a ragged rent in the middle into which I could put my whole hand. This woman, like the previous case, went on to speedy recovery and left the hospital in eleven days practically well and has been in perfect health since.

Now, just one or two points to which I want to call your attention. Don't be fooled in your diagnosis by the absence of the usual symptoms of pregnancy, for you won't get them, not one of them, no matter to what period these cases go before rupture occurs. In case two this woman became pregnant immediately following the month's administration of permanganate; she went on and menstruated twice after that and not one symptom of pregnancy was present at any time. Another point. What, if any, effect did the permanganate have in bringing about these tubal gestations?

Now, just a word about the technique of the operation. You are confronted by conditions in these cases not found in any other abdominal operations. In the first

place, no matter how large a clot you find, there are hundreds of smaller ones varying in size from a chestnut to a pin head, and you find them all over and under the bowels and tangled up in the omentum, and it is surprising how quickly the minute ones become organized; there will be thousands of these little specks resembling dried mucus all over the bowels. You cannot wipe them off with gauze sponges, neither can you ferret out the small unorganized clots

hidden away in the convolutions of the bowels, and I believe the only safe way, before closing the abdomen, is to get these as near all out as possible and notwithstanding the position of some of our best men that the abdomen should never be washed out at the time of an operation, I always in these cases do it with a hot saline solution time after time until no more clots can be found, and some one must show me a better way before I discontinue the practice.

SCIENCE AND ART IN MEDICINE.

J. C. Hemmeter, Baltimore, after pointing out that an exact and definite distinction between science and art is an impossibility, reviews the history of medical thought and shows that, after the evolution of the scientific part of medicine which he has outlined, reformers were needed to emphasize again and again that, in addition to being a science, medicine is also an art. "The ultimate object of all medical studying," he says, "is to help and to heal. The peculiar problem of the physician is not so much the disease, but the diseased patient; and the significance and importance of medicine is to be sought in this object, to preserve the highest possessions of human beings, namely life and health." He then reviews the principal features of the progress in the therapeutic art during the past two decades, noting first the advances in the physical methods, the dietetic treatment and the modern nursing methods. In this connection he utters a caution against the excessive fear of contagion that has been aroused in some cases by the ultrabacteriologic theories of

the causation of disease. There is no doubt in his mind, he says, that for every case of direct infection there are ten others where physicians and nurses have actually been protected from the disease by their intimate association with the patient. This, of course, does not mean that ordinary precautions are to be abandoned, but is mentioned only to relieve useless fears that may affect the usefulness of the nurse. Recent advances in pharmacology are noted, including the therapeutic applications of discoveries in bacteriology, serumtherapy and organotherapy. Hemmeter here mentions as a probable outcome of the modern studies on immunity, the possibility of so adapting the blood of an animal to a particular form of cell as to produce an antiserum for malignant growths. In conclusion, he criticises the tendency of experimental workers to disparage or undervalue other lines of research, and vice versa. In his mind subjective and objective methods of investigation are inseparable, and he calls attention to the distinction between facts and truths. Facts are little truths appreciable by our senses; but back of and beyond these facts, later experience often reveals the higher and greater truth.—*Journal A. M. A.*, Jan. 27, 1906.

The Journal of the Michigan State Medical Society

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Subscription Price, Two Dollars per year, in Advance

FEBRUARY, 1906

Editorial.

DOCTOR BIDDLE RETIRES.

At the meeting of the Council of the Michigan State Medical Society, held in Detroit, Jan. 12, Dr. Andrew P. Biddle declined re-election to the office of Secretary of The Michigan State Medical Society, and with the January number of the Journal retired as its editor.

Doctor Biddle comes from an old Detroit family, received his preliminary education in Detroit and the United States Naval Academy at Annapolis. He graduated from the Detroit College of Medicine in 1886, and served a term as Senior House Physician at Harper Hospital. Since beginning the practice of medicine, he has been prominent in the medical affairs of Detroit and Michigan.

Doctor Biddle has held the office of Secretary of the Michigan State Medical Society during the most difficult period in its history, the period of reorganization and growth. Never before had the work been more arduous, and never again will there be required so much thought, so much activity, or so much of what we usually call tact, as were necessary during this epoch. Under his stewardship, the society has tripled its membership, and stands to-day higher scientifically, and more firm financially than ever before. He has, as editor of the Journal since its

inception, superintended its growth and development, and by his indefatigable efforts made it what it is to-day.

Doctor Biddle's activities will by no means cease. He has recently been appointed Dermatologist to the Detroit Board of Health, and at its last meeting the American Dermatological Association honored him by an election to the Council of the Society, and by a membership on the Finance Committee of the Committee on Organization of the International Congress on Dermatology, to be held in New York City September, 1907. It is to be hoped, and it is expected that the Michigan State Medical Society may long enjoy and profit from the doctor's interest, help, and advice.

B. R. SCHENCK.

SUPERSTITIONS AND ERRORS IN MEDICINE.

A vast amount of facts accurately observed must be collected before theories and laws can be established. If the facts be correct, the theory will take care of itself. To illustrate how long it takes to acquire facts and give them their proper relations, no better lesson can be given than in the venereal diseases, which are not modern by any means. In Hunter's time many opinions were held. Hunter in his studies inoculated himself on the arm with the gonorrheal discharge of an inmate in the Newgate Prison and developed syphilis. He concluded at once that syphilis and gonorrhea were the same disease. It was not until half a century afterwards that the conclusion of Hunter as to the identity of syphilis and gonorrhea was finally demonstrated to be false by Ricord, who proved that his master had adopted a conclusion from an

insufficient basis of facts. Ricord said they were two distinct diseases, yet he failed to see that there was still another disease. It remained for Bassereau, one of Ricord's pupils, three generations later to demonstrate that the virus of syphilis is distinctly different from the poison which produces the contagious venereal ulcer or chancroid. Yet John Hunter was a very accurate observer. By his studies of the blood-vessels in the antlers of deer he found that the blood-vessels would accommodate themselves to circumstances and this knowledge enabled him to devise his operation for aneurism.

It is better to have a wrong opinion than no opinion, for if it be wrong you may bump up against something that will set you right. Doubtless in the past, superstition may have had its use. It may have had a restraining influence in attempting what man was unprepared to do. The false belief that the world was flat kept back discovery and navigation for years, but the world was not yet ready to benefit from the knowledge that it was not flat.

While

"Truth is truth

To the end of reckoning"

the early superstitions were stepping stones to truth. Astrology becomes astronomy and the black arts lead to chemistry. The superstition of the church in the middle ages that it was wrong to shed human blood, kept back surgery for centuries until a master barber surgeon, Ambrose Paré, came along. He well deserves the title of the Father of Surgery, placing it as he did upon a more humane basis. Superstition and error ought to teach mankind this: after an error has been discovered, ever keep it in mind that it cannot occur again. In

all so called new systems there are old principles reappearing, which, if the past were diligently consulted, would guard against repetition and revamping of theories long ago proved futile and worthless.

Are there any superstitions in medicine? We have gotten rid of many, but some still remain. We have passed the grape seed stage in appendicitis. We no longer starve patients with a fever, on the contrary we try to assist nature by building up instead of tearing down. In typhoid fever we find many still pinning their faith to intestinal antiseptics, forgetting that the bacilli of Eberth can be grown from a blood culture and that they are dealing with a systemic infection. I think too many are still giving quinine for every condition under the sun. We do not believe in cold in infection, but how often we take refuge behind it.

We are not bound by authority as the profession once was. We can no longer justify our errors by authority, because some famous so-and-so said so. There are no authorities in medicine, and it is a mistake to speak of any one as such. Truth is the only authority. So called authority has often been proven mistaken. There is still good use in the medical profession for such men as Ingersoll in theology and Tillman in politics. They are nothing in themselves, but they provoke thinking that accomplishes good.

A common superstition, or better a phantom that physicians have is that, although they have had experience running over years, they have not the time nor ability to report their cases or give their ideas of certain diseases. Their timidity or selfishness in not writing leads us to think that, if this policy were carried out, modern medicine would soon resemble

Chinese medicine. We, each one of us, owe a debt to the rest of the profession, that no sacrifice on our part can repay. Tee Han Kee writing on Chinese medicine in *American Medicine*, says of the third period or the Retrograding age of Chinese medicine: "We now come to an age in which medicine instead of making greater progress has been gradually retrograding. The physicians who have achieved the greatest prominence in their profession have become selfish and, instead of leaving their knowledge to posterity, have buried it with them." This is true of professional men in other lines.

Each should contribute his mite that the aggregate may be large. It will repay us at times to examine ourselves to see if we are not getting into a rut and, too, if there are not more superstitions and more false theories that should be thrown out.

H. E. RANDALL.

County Society News.

BARRY.

The officers elected at the annual meeting of the Barry County Medical Society are as follows:

President—D. E. Miller, Hastings.
Vice-Pres.—J. W. Rigterink, Freeport.
Sec.-Treas.—J. G. McGuffin, Hastings.
Delegate—J. W. Rigterink, Freeport.
Alternate—Chas. Russell, Hastings.

BAY.

The annual meeting of the Bay County Medical Society was held at the home of the retiring president, Dr. R. W. Brown, Dec. 11, 1905. Officers were elected for 1906 as follows:

President—F. E. Ruggles, Bay City.
Vice-President—Mary Williams, Bay City.
Secretary—A. W. Herrick, Bay City.
Treasurer—C. H. Baker, Bay City.
Delegate—R. W. Brown, Bay City.
Alternate—Morton Gallagher, Bay City.

Dr. Brown entertained the society at an elaborate banquet.

At a meeting of the Bay County Medical Society held Jan. 8, 1906, Dr. E. A. Hoyt offered the following resolution: Resolved that we, the members of the Bay County Medical Society, are opposed to the law recently enacted to regulate the registration of births, and stand ready to pay a percapita tax, if necessary, to carry a test case to the Supreme Court. The resolution was passed and the secretary instructed to have it published in the *Journal of the Michigan State Medical Society*.

A. W. HERRICK, Sec'y.

CALHOUN.

The annual meeting and banquet of the Calhoun County Medical Society were held in Albion Dec. 13, 1905.

Dr. C. S. Gorsline, of Battle Creek, presented a paper entitled "Appendicitis," after a recent personal experience with that disease.

Dr. W. M. Riley, of the Battle Creek Sanitarium, gave a paper entitled "Cause and Diagnosis of Diseases of the Nervous System."

At the election of officers for the ensuing year the following were chosen:

President—W. H. Haughey, Battle Creek.
Vice-President—R. M. Gubbin, Ceresco.
Secretary-Treasurer—A. S. Kimball, Battle Creek.

Eight new members were admitted into the society at this meeting.

At the banquet which followed the business meeting the president's address, "Suggestions in Every-day Practice," was read by Dr. A. J. Abbott, of Albion. Appropriate toasts were responded to by members of the profession and others and musical selections followed and closed a most profitable and pleasant meeting.

The next meeting will be held in Battle Creek, March 6, 1906.

A. S. KIMBALL, Sec'y.

DELTA.

The Delta County Medical Society held its annual meeting at Escanaba Dec. 12, 1905. The following officers were elected for the ensuing year:

President—Geo. Bjorkman, Gladstone.
Vice-President—A. L. Laing, Rapid River.
Secretary—H. W. Long, Escanaba.
Treasurer—Wm. Elliott, Escanaba.
Director—M. P. Fenelon, Escanaba.
Delegate—Geo. Bjorkman, Gladstone.
Alternate—W. J. Laird, Nahma.

Dr. Theo. A. Felch, of Ishpeming, was elected

an honorary member of the Delta County Medical Society.

Following the business meeting the society entertained a representative of each of the professions of the county and Dr. Felch, of Ishpeming, and Dr. Cunningham, of Marquette, as its guests at a banquet.

As the Delta County Medical Society entertains the Upper Peninsula Society at Escanaba in 1906 it has already begun to lay plans for the meeting.

H. W. LONG, Sec'y.

IONIA.

The Ionia County Medical Society held its annual meeting Dec. 13, 1905, convening in the comfortable rooms of the Town Club. The time was taken up solely with business, no papers being presented, although several topics of medical interest were informally discussed.

The officers chosen to guide the society through the coming year are as follows:

President—W. R. Alton, Portland.

Vice-Presidents—F. M. Marsh, Ionia; C. B. Gauss, Palo; J. F. Pinkham, Belding, and F. L. Morse, Sibewa.

Secretary-Treasurer—C. S. Cope, Ionia.

Censor—W. L. Barnes, Ionia.

Delegate—C. S. Cope, Ionia.

Alternate—C. B. Gauss, Palo.

Auditors—David McClurg, Portland, and J. F. Pinkham, Belding.

C. S. COPE, Sec'y.

KENT.

The annual meeting of the Kent County Medical Society was held Dec. 13th, 1905. More interest was shown in this than in any other meeting since our organization, and we anticipate many good things for the coming year. The following officers were elected:

President—Chas. C. Irwin, Grand Rapids.

Vice-President—J. A. McPherson, Grand Rapids.

Secretary—Francis J. Lee, Grand Rapids.

Treasurer—S. L. Rozema, Grand Rapids.

Delegates—R. R. Smith and A. M. Switzer, of Grand Rapids.

Alternates—G. L. McBride and E. M. McCoy, Grand Rapids.

F. J. LEE, Sec'y.

LENAWEE.

The annual meeting of the Lenawee County Medical Society was held at Hotel Gregg, Adrian, Dec. 12. President R. M. Eccles called the meet-

ing to order, thirty members being present. Minutes of the last meeting read and approved and the secretary's report accepted. Treasurer's annual report showed the society to be in a flourishing condition financially, there being \$53.00 on hand. Referred to the board of directors.

F. E. Andrews, chairman, read the report of the board of directors, and R. M. Eccles, delegate to the last state meeting, gave his report of the meeting.

Following the retiring president's address was the annual election of officers, which resulted as follows:

President—L. S. Town, Geneva.

Vice-President—D. L. Treat, Adrian.

Secretary-Treasurer—E. T. Morden, Adrian.

Board of Directors—L. S. Town, Adrian; C. Kirkpatrick, Adrian, and R. M. Eccles, Blissfield.

C. G. Lehman, of Palmyra, and J. E. Westgate, of Adrian, were elected to membership.

Upon motion the president appointed C. Kirkpatrick, W. B. Sprague, and J. C. Johnson a committee to draw up resolutions upon the death of H. D. Hull.

D. L. TREAT, Sec'y.

MARQUETTE—ALGER.

The Annual Meeting of the Marquette-Alger Counties Medical Society was held at the Negaunee Hospital on Tuesday night, Dec. 19th, 1905. Twenty members were present. Dr. H. W. Sheldon read a paper on Addison's Disease, and presented a case of the malady. The officers elected for the ensuing year are:

President—G. G. Barnett, Ishpeming.

Vice-Pres.—H. M. Cunningham, Marquette.

Sec.-Treas.—H. J. Hornbogen, Marquette.

Delegate—H. W. Sheldon, Negaunee.

Alternate—J. H. Andrus, Negaunee.

H. J. HORNBOGEN, Sec.

MASON.

The following paper was read before the Mason County Medical Society by Dr. Edward J. Bernstein, of Kalamazoo:

MASTOIDITIS AND THE RADICAL OPERATION.

EDWARD J. BERNSTEIN, KALAMAZOO.

It seems to be a very common error to think of suppuration in the tympanic cavity as something quite distinct from mastoiditis, while in truth, owing to anatomic characteristics common to this

portion of the petrous bone, they are part and parcel of the same condition. The fact is that the diploic structure of the mastoid is not like that of ordinary bone, but these holes (for want of a better name) are true reduplications of the tympanum, lined throughout with a single layer of endothelial cells of the identical character which one finds in the tympanic cavity. In other words, it is but a continuation backwards of the drum cavity and the diseases of one are diseases of both, in the vast majority of cases. Politzer and Brühl in a large number of postmortems found pus in the antrum and mastoid cells, in acute middle ear suppurations even where there had been no symptoms of mastoid irritation *in vivo*; and that the pathological changes were spread over this entire mucous membrane. The difference was one of degree and that degree dependent on this; that in certain cases, due almost entirely to anatomic conditions which departed from the standard, the purulent secretions in that part of the bone were shut off from their normal drain—through the aditus to the drum, thence to the eustachian tube, or external auditory canal. These alterations are due either to a narrowing of the aditus, a too sharp bend in its curvature or to the enormous swelling of little folds and reduplications of the mucous membrane, at its mouth. You are no doubt aware that in the tympanic cavity, in the neighborhood of the aditus, we find these folds—some running horizontally, some running vertically, a few irregularly disposed about the stapes or fenestra cochlearis (which are of pathological importance in obstructing the free play of this bone). A third set of folds is found, principally in the neighborhood of the antrum.

That these are not merely academic distinctions, but of real value in a proper appreciation of the disease at hand and the rationale of its treatment is clear, on closer study.

Aside from obstructing free drainage in the upper portion of the tympanum, the reduplications of the first sort may be considered as playing an important role in the etiology of those diseases of the tympanic attic, the majority of which start with a suspension of vaso-motor inhibition in that region. Taking into consideration these reduplications, we can readily see that the secreting surface of the tympanic cavity may easily be doubled or trebled—a condition which serves to account for the rapid development of congestive disorders in this place, and for the copious exudate without calling into consideration any contribution from the antrum. As the blood supply of this region comes directly from the carotid, it affords an opportunity for sudden engorgement of

the mucous membrane and submucous tissue, in the event of suspension of vaso-motor inhibition, of general or local reflex origin.

Mastoiditis occurs as acute and chronic primary, and acute and chronic secondary affections.

Acute primary inflammation is quite rare and is usually the result of injury, exposure to severe cold, or may occur in the course of syphilis, but it is open to question even in these cases if some preliminary inflammation has not preceded.

Secondary inflammation occurs as a consequence of one of three conditions: First, an acute congestion, generally in its inception a vaso-motor neurosis; second, an acute catarrhal inflammation starting as a disturbance in the naso-pharynx and extending progressively and often rapidly; and third, and this is possibly the most prolific source, as a sequence of suppurative disease of the drum. In those acute catarrhal inflammations, in the exanthemata, or influenza the trouble begins in a portion of the mucous tract remote from the middle ear, usually in the naso-pharynx. In these cases the primary congestive stage is of short duration and is accompanied by, or followed rapidly by, considerable swelling of the mucous membrane and by increased activity of the secreting glands. The pain is here less sudden in its onset and less severe in its paroxysms than in the acute variety of the vaso-motor type; the appearance of the ear also indicates a difference in condition, characterized by a more generally diffuse congestion at the inner end of the canal and tympanum. The nervous system is less profoundly affected and the progress of the trouble is slower and more progressive. The whole course of a case from its inception to possible necrosis of bone may only last a few days. Often, indeed most often, the acute condition will quickly subside as soon as a rupture of the tympanum occurs, whether artificially or spontaneously done, leaving at times only a sense of fullness in the ear. When this does not result then this complex results, viz.: Pain referred to mastoid or vertex, hyperpyrexia, and slight tenderness over the mastoid. Unless the true state of affairs is now recognized and recourse had to opening the mastoid, in a short time a fluctuation will be found over that structure, at its tip, in the digastric fossa, or symptoms of meningitis intervene to tell of relief of pent-up pus.

Before opening of the tympanum occurs we often find a most profound disturbance to the nervous system, subnormal temperature, rapid pulse, slowed and irregular breathing, irregularity of pupils, jerky contractions of the muscles of the arms; in short, all the premonitory symptom

complex of acute meningitis, and this is most often found in the vaso-motor variety.

As a result of the slow progressive inflammation of the mastoid, one of two conditions results a limited necrosis, or, when the inflammation subsides without such, an increase in the bone elements and an obliteration of the mastoid cells—a process of hyperostosis. This latter condition results most frequently in a third category of mastoid complication as a result of prolonged suppuration. It then produces the condition known as sclerosing or eburnation of the mastoid. It is nature's attempt to prevent the spread of the suppurative process to the brain coverings; it usually occurs when the purulency began in early life and did not result in necrosis. It explains the apparent immunity from deep-seated trouble in those who have carried suppurative ear diseases from childhood. That this immunity is not complete is too often shown in sudden lighting up of apparently cured conditions, especially in cold climates where they are likely to be exposed to the dangers of intense cold as in driving.

Being confronted with a case of acute mastoiditis, and by that I mean such a condition calling loudly for relief of pent-up pus behind the aditus ad antrum—the question presents itself: have I here an empyema of the pneumatic cells capable of resorption or have I to deal with one in which necrosis will quickly result?

That one cannot tell from casual inspection whether one has this latter or not is shown in a number of cases where mastoids have been opened and the whole process had undergone necrosis without even rupturing the drum. I have had two such cases.

In an acute case the later the drum is opened the more likely we are to find necrosis. Where a tympanum is opened, if there be not a decided decrease in discharge within four weeks, in cases of profuse suppuration, Korner invariably found caries. As to the question of the diagnostic value of percussion to determine the integrity of the bone, Jurgens (*Monats. f. Ohrenh.*, November, 1900) has shown upon section of twenty-four cadavers that it is utterly unreliable, though Körner held that by this he could determine, in a measure, its condition. Of one thing I should beg to call your attention and that is, that in diabetes and influenza the most serious necrosis may occur with no external manifestations, such as are given by pressure, sensitiveness or swelling. Indeed this last condition we rarely see today as most practitioners are too alert to permit it to occur before calling on the aurist.

Given a case of acute complication of the middle ear, how shall we handle it? Firstly, on the

first sign of trouble a big thorough opening through the posterior segment of the drum, continuing the incision towards the upper and posterior wall, a wick of sterile gauze is then placed loosely in the canal. If pain be not relieved immediately, a Leiter's coil or ice pack on the head, for not over thirty-six or forty-eight hours. It has been objected that the coil serves merely to mask the symptoms, and that it will not abort a mastoiditis. No, it will not, for the condition already exists, and all we wish to do with continuous application of cold—for this short period—is to so reduce the swelling of the small reduplications of mucous membrane, to which I have above called your attention, that the natural flow towards the tympanic cavity may be free. No possible harm can result from this conservatism, when a case is diligently watched. The symptoms usually give enough indication that one must open the mastoid. When pain and fever do not abate in at most eight days and in the meantime no more urgent indication has called for an earlier interference, we must proceed to do a simple mastoid opening. Schwartz, in giving this indication for procedure, bewails his inability to positively tell when to operate in cases which run course without pain, oedema, or fever. It is, however, now considered best when an acute suppurative ear process continues beyond its ordinary duration of four to six weeks, to make an exploratory incision in the bone.* It is especially called for when gastric disturbances, such as loss of appetite, heavily coated tongue and constipation exist. These symptoms usually point to extra-dural abscess.

In the days before the introduction of the Widal reaction countless numbers have gone to their graves in these conditions, with diagnosis of typhoid fever, many of whom we now save by doing simple operation of Schwartz. The radical operation (that of Zaufel-Körner, not that of Schwartz, which is intended to act simply as a drain, and the indications for which have just been given), is done for the eradication of diseased structures in the more chronic cases, and is the operation, more or less modified, done by most men of experience to-day. Its indications are as follows:

First. In chronic inflammation of the mastoid with repeated swelling of the superimposed tissues, which may even show a tendency to disappear, notwithstanding complication of abscess over the process, *especially if a fistulous track exists*, leading to the skin at the side of the neck, the external auditory canal, or towards the pharynx. It is done here, even though there be *no present direct danger to life*.

Second. If the otoscope shows an implication of the attic (through fistulæ in the upper posterior periphery of the drum membrane). *Especially urgent* are those cases in which one has *choleostomatous* formation.

Third. Schwartz's indications for the radical operation especially include *all* cases of chronic suppurations of the middle ear, even though there be *no external evidence* of the inflammatory process going on in the deeper mastoid cells. Certainly as soon as any possibility of threatened danger to life, through retention of pus or production of choleostoma, supervenes.

Fourth. As conservative prophylaxis to prevent fatal complications in every case of intractable middle ear suppuration which has resisted thorough treatment over four months, even though no external evidence of the changes going on in the mastoid are at hand; whenever we have continued formation of polyps or feel certain that caries of bone exist; or in those in whom the otoscopic examination shows that the excessive flow of pus comes mainly from beyond the drum cavity, and yet not have evidence of pus retention. Körner performs the radical operation as soon as the diagnosis of chronic bone disease is established. If this be uncertain, then the following demand the radical.

First. As soon as pus retention appears consecutive to chronic suppurations which do not yield promptly to treatment.

Second. In hyperostosis of the auditory canal, because such prevents a free view of the deeper parts and interferes with the treatment of the suppuration.

Third. At the first signs of intracranial complication. If none of these exist and a diagnosis of necrosis is not positive, then he thinks an operation uncalled for. "I might add," he says, "that I have never seen a case in my own experience, nor can I find any record of such where a *simple unobstructed case of muco-purulent* discharge from the antrum ever led to intracranial complications." He therefore warns us against doing a radical operation unnecessarily, as nothing does so much to discredit surgery as indiscriminate operation. The commonly accepted contra-indications for radical operation are these:

First. Very young children. for in them, thanks to their great natural tendency to spontaneous cure and expulsion of diseased tissue—which clinical evidence upholds—simple opening of the mastoid suffices. We are especially warned against too radical procedures in very early childhood, for we must bear in mind that at birth the mastoid cells do not exist, and that they are only gradually developed; but by the *end of the third*

year they have attained mastoids approaching the mature adult. Furthermore, the general contra-indications to any important operation. Whether diffuse suppurative Lepto-meningitis contraindicates the operation is open to question by some, Jansen of Berlin among the number, though the most conservative men refrain in these conditions. Quincke's lumbar puncture facilitates the diagnosis in these cases and at the same time aids treatment.

Both Körner and Schwartz, as well as most other men to-day, unite upon the fifth indication of Schwartz, "as a prophylactic in order to prevent fatal consequence in incurable foetid discharges *without inflammatory* symptoms of the mastoid and without any indication of pus retention, as soon as full otoscopic investigation shows that the suppuration is not confined to the drum cavity." Where regular and thorough cleaning, removal of diseased tissue fails to cure the discharge, you may rest assured in these cases that the bone is seriously involved and that in all probability, choleostomatous formation will be found in antrum and mastoid cells.

As to the ultimate results of the radical mastoid operation, we take the statistics of the Halle clinic as an example.

Out of 200 cases the otorrhea was permanently cured in 74.2 per cent.; Stacke had 94 per cent cures; in the balance there was but slight discharge, and all possible danger of cranial complication was eliminated, as free drainage was thereby permanently established. There were 5.9 per cent. deaths at this (Halle) clinic, and the postmortems showed except in about one p. c., that death could not be attributed to the operation, but rather to the fact that it had been undertaken too late. In other words, that serious intra-cranial complications were already present before the operation took place. In a personal communication some five years ago, Jansen of Berlin told me that he never had a bad result when the operation was undertaken early, and only a very small p. c. of loss after first signs of meningeal involvement.

As to hearing, the results are equally brilliant. Schwartz's conclusions are as follows: "At all events, the possibility of very marked improvement in hearing is not excluded, and on the other hand, a slight reduction of hearing with retention of fairly good function, in individual cases, is not to be denied."

Stacke reports in 100 cases, hearing remained the same in 49, improved in 31, and made worse in six, while in 14 no record is given.

Grünert reports 55 per cent. improvement, 39

no change, and 6 per cent. made slightly worse. He concludes thus: "(1) In cases with intact labyrinth, one may await improvement, provided there was considerable degree of deafness before the operation. (2) It is exceptional for these cases to be made worse or even to remain the same. (3) In those cases where functional tests were made before operating and normal integrity remains, as a rule operation does not affect hearing. (4) In a number of cases belonging to this category, a very perceptible increase of function was noted, though we must be also prepared to find even a decrease at times in a very small number."

As regards the manner of performing the operation, I shall have very little to say, as no written description adequately describes it. In this matter I can not too heartily endorse the dictum of Körner, who says: "Whoever would attempt an important operation on the living from description alone must make many fatal errors. One should have seen an adept do it a number of times under all variety of circumstances, and then do it dozens of times on the cadaver."

But this much can be said, that I am in thorough accord with those who condemn the closure of the post auricular wound by blood clot in acute cases. This is beginning to find echo in American otology.

In the radical operation, for chronic troubles, we do close the postauricular incision, making a flap of the posterior wall of the external auditory canal at the time of the operation, and then, a few weeks after, making a second opening through the skin to complete the plastic. We look for a linear scar which is hardly perceptible, for increased or at least retained function, cessation of discharge and absolute immunity from intracranial complication in from 80 to 95 per cent. of our cases.

MUSKEGON—OCEANA.

The annual meeting of the Muskegon County Medical Society was held at the office of Dr. Jacob Oosting, Dec. 8, 1905. Meeting called to order by the president, Geo. S. Williams.

Jacob Oosting read a paper on "Obstetrical Errors," which was most interesting and instructive. It brought forth a general discussion and relation of case incidents in obstetrics which was actively participated in by nearly all present.

The matter of changing the name of the society from the "Muskegon County Medical Society" to "Muskegon-Oceana Counties Medical Society" was discussed and finally decided that as there

was very little prospect of the organization of a society in Oceana County the name of this society be changed to "Muskegon-Oceana Counties Medical Society."

The following new members were received into the society:

W. L. Griffen, Shelby, Oceana Co.
R. J. Davidson, Shelby, Oceana Co.
G. F. Lamb, Pentwater, Oceana Co.
Gayfree Ellison, Muskegon.
Lunette I. Powers, Muskegon.

The following officers were elected for the year 1906:

President—J. F. Denslow, Muskegon.
Vice-President—J. D. Buskirk, Shelby.
Secretary—V. A. Chapman, Muskegon.
Treasurer—Jacob Oosting, Muskegon.
V. A. CHAPMAN, Sec'y.

O. M. C. O. R. O.

The O. M. C. O. R. O. County Medical Society held its annual meeting on Dec. 13, one week early on account of the holidays. The following officers were elected:

President—C. H. O'Neil, Frederick.
Vice-President—L. A. Harris, Gaylord.
Secretary-Treasurer—C. C. Curnalia, Roscommon.

C. C. CURNALIA, Sec'y.

ST. JOSEPH.

The St. Joseph County Medical Society met in annual session at Three Rivers, Dec. 19. Dr. E. J. Bernstein, of Kalamazoo, read a paper, interesting and full of scientific value, on "The More Common Diseases of the Ear and Throat." For this paper a vote of thanks was tendered Dr. Bernstein. The Councilor of the Third District, Dr. Haughey, of Battle Creek, was present and gave a good talk on "Pneumonia." What the society lacked in numbers was made up in enthusiasm.

The election of officers resulted in the choice of the following:

President—W. C. Cameron, White Pigeon.
Secretary—John R. Williams, White Pigeon.
Treasurer—Thos. J. Haines, Three Rivers.
Delegate—John R. Williams, White Pigeon.
Alternate—Blanche Moore Haines, Three Rivers.

Board of Directors—John R. Williams, M. Sabin, Thos. J. Haines.

JOHN R. WILLIAMS, Sec'y.

SCHOOLCRAFT.

At a regular meeting of the Schoolcraft County Medical Society, held in Manistique, Dec. 19, 1905, the following resolutions were unanimously adopted:

Whereas, As our State Medical Society and National Medical Organization discourages and discountenances the newspaper publication of cases and of physicians' names in connection with cases and

Whereas, Such publicity is not in keeping with the established code of ethics of the American Medical Association, therefore be it

Resolved, That we, the members of the Schoolcraft County Medical Society do hereby most respectfully petition and request the editors of all the county newspapers from and after the date of Jan. 1, 1906, to refrain from the publication of cases or of physicians' names in connection with clinical, surgical or other cases or of any matter whatever pertaining wholly to professional work. And further be it

Resolved, That on and after Jan. 1, 1906, all members of this society shall discontinue the use of professional advertising cards in any form and the editors of the county newspapers are hereby requested to discontinue the publication of the same.

G. M. LIVINGSTON, Sec'y.

Medical News.

At a meeting of the California Academy of Medicine recently, Dr. B. F. Carpenter, in the course of the discussion of a paper stated that he knew of an X-ray operator who had no active spermatozoa in his semen as long as he was using the light regularly, however active spermatozoa reappeared after he discontinued its use.

Dr. M. P. Fenelon, of Escanaba, is spending a month in the south.

Dr. L. M. Power has located in Escanaba.

The newly appointed staff of the Delta County Hospital are Drs. Fenelon, Forsyth, and Cotton, of Escanaba. They began their services Jan. 1st, 1906.

Free Treatment at the University Hospitals.
—The discussion with regard to free treatment in the hospitals of the University of Michigan, which has recently encouraged some expression of a sentiment that persons who are financially able

to pay for medical or surgical treatment should not receive it free of charge, led President Angell to refer to the subject in his last annual report. He gives the reasons which have seemed to the authorities sufficient justification of the present system.

"It is with regret," he says, "that we have learned during the year that a considerable number of our friends in the medical profession have been aggrieved because we make no charge for the treatment in our hospitals of patients who might afford to pay a liberal sum for medical or surgical care. This complaint arises, we think, from a failure to understand the ground on which our hospitals were established and are conducted. Certainly they were not founded with any purpose to interfere with the business of practitioners but rather with the purpose of giving medical students the best preparation for the responsible duties of practitioners. Patients were invited to come and receive gratuitous treatment provided they paid a reasonable sum for board and presented themselves before the classes for clinical treatment. The primary object we had in view was the instruction of the students. It proves in our years of experience that it is very rare that a patient who could afford to pay the fees for private treatment resorts to the hospital. Reluctance to come before the class for treatment generally deters persons of means from presenting themselves. Therefore the conditions upon which patients are admitted for gratuitous treatment are not, in fact, so seriously objectionable as those have supposed, who have been led to believe that we were interfering with the legitimate practice of the profession.

"But furthermore it is not clear how, if we desired, we could determine who should be asked to pay a fee for treatment. We have no authority to require anyone to make a return of his property to us. And if we had, it is not easy to fix the line which should be drawn between those who are and those who are not able to pay a sum beyond what is now required of every patient. But in fact the interference with private practice, so far as we can judge from our knowledge of the pecuniary ability of our patients, is so very trifling that we trust our medical friends will not give themselves concern about the matter. Most assuredly as the medical departments were established and are administered with the intention of aiding the profession, we shall not willingly do anything to harm the profession. We are well aware that the prosperity of the departments depends largely on their support, and this we shall endeavor in any feasible way to deserve."
—*University of Michigan News Letter.*

The address of Dr. George Dock, professor of the theory and practice of medicine in the University of Michigan, which was delivered at the commencement exercises of the College of Medicine of the University of Southern California, has been published in the *Southern California Practitioner* under the title "Physician and Patient."

Dr. Victor C. Vaughan, dean of the department of Medicine and Surgery in the University of Michigan, lectured before the students of the University of Kansas School of Medicine Nov. 17, 1905, on the subject, "Immunity from Diseases."

Dr. Frederick G. Novy, professor of bacteriology in the University of Michigan, gave a lecture Nov. 4, on "Trypanosomes," before the Harvey Society at the Academy of Medicine, New York City. This was the third lecture of the course, the others being given by Professor Von Noorden of Frankfurt, Germany, and Professor Meyer, of Vienna, Austria.

Papyrus Ebers.—C. H. von Klein, Chicago (*Journal A. M. A.*, December 23), gives the history of the discovery of the Ebers papyrus and its description, with the evidence as to its age, nearly 1600 B. C. It appears to be considered as probably a copy of a still older document, going back, perhaps, to the time of some prehistoric Hyksos king. From the description of its contents it would seem to cover nearly the whole subject of the practice of medicine and therapeutics as known to the ancients and to antedate our knowledge of ancient medicine hundreds of years before Hippocrates, who hitherto has been accounted as the father of medicine. Von Klein also reviews the other data in regard to ancient Egyptian medicine, and goes at some length into a discussion of the relations of Mosaic and Talmudic medicine to that of the earlier Egyptians. The Ebers papyrus, he says, opens a new era in the history of medicine and pharmacology, showing that thousands of years before the Christian era there were learned men in Egypt who could make intelligent observations of disease, combine complicated prescriptions and use them with judgment. In conclusion he speaks of a translation into English which he has made of this most important document of the early history of medicine.

The first of January every member of the American Medical Association received from the General Secretary of the A. M. A. a blank sheet for the reporting of certain information to be used in the Biographical Card index of all the legal practitioners of medicine in the United States. There is at present no authentic list of the American

medical profession, or any record of their education and preparedness to practice medicine. This is highly desirable in view of the progress in medical Science and the advances in the teaching methods of the Medical Colleges, especially in the last 25 years. The A. M. A. proposes to push this work to a successful issue, with the help of the profession. There should be a repository for this information, and the logical one is the A. M. A. For that reason we urge every one to fill out the blanks and forward them at once to the Gen. Sec. A. M. A., 103 Dearborn ave., Chicago.

The American Medical Association is also working upon a National Medical Directory which shall be authentic, and which shall differentiate all members of County, State and National Medical Societies from the irregulars, quacks, etc. This volume will be much more serviceable than any now on the market, being published by people who will make the greatest effort possible to bring it up to date and keep it there. Information regarding college, date of graduation, and date of license will be verified from official sources. The same information will be furnished regarding each physician whether or not he is a subscriber to the directory.

As we go to press the news reaches us that Dr. Beverly D. Harison, Secretary of the State Board of Registration in Medicine, and Dean of the Medical Fraternity of the "Soo," is to locate in Detroit, and engage in the practice of Legal Medicine, as well as giving a more central location to the offices of the State Board of Registration in Medicine.

Dr. Birge C. Swift, of Millington, was married October 7, 1905, to Miss Marian McIntosh of Grand Rapids.

As noted in our issue of last month our neighbor, the Alkaloidal Clinic, has appeared under a new cloak. The American Journal of Clinical Medicine is an attractive Journal, and full of life and spirit, and we wish it success in its new form.

Correspondence.

A GREAT WORK—WHAT A COUNTY SOCIETY MAY DO.

The following letter from one of the leading surgeons of Indiana contains so much of interest to county societies, indicating what may be done in any section where as many as three or four

wide-awake men can be gotten together, that we are glad to put it before the profession. "What one man has done, other men can do."

Valparaiso, Ind., Dec. 21, 1905.

Dr. J. N. McCormack,
Chairman Committee on Organization,
Bowling, Green, Ky.

Dear Doctor—Your letter asking me to elaborate our plan of Post Graduate work here, with the view that such an account may be used in inducing other medical societies to do likewise has been received.

I am greatly pleased to have the privilege to do this, not only for your personal gratification, but for the reason that I am confident that it will redound to the very great benefit of such societies as deem it wise to adopt our plan, as well as to the individual members. It will enable them to do better and more efficient work for the public as a whole, and aid each individual physician in rendering the best possible service to the unfortunate sick.

Our work was begun two years ago by getting every physician interested in becoming more familiar with scientific and practical knowledge which would be an advantage to him at the bedside, and thus would broaden him as a physician. With this end in view, we rented a room, formed a club, and endeavored in every way to strive and build up the social, scientific, and material spirit for the welfare of the profession. From every point of view I desire to report that we have been eminently successful.

In carrying out this plan we divided our work in such a way that each physician was required to act as a teacher of some special subject, and all the others took their places as students once more. Anatomy and Surgery was assigned to one, Physiology and Practice to another, and so on through the list of subjects, one fundamental and one practical branch to each teacher. Our meetings were held twice a week, regular lessons were assigned, and we were expected to be present and give one hour's time to the recitation and study of such subjects as were assigned to that evening. In this way we were enabled not only to exchange individual views as to what we believed, but could always have some good medical authority to place us right if it was found that we were wrong. This plan proved very desirable, and we soon learned that the teacher of the topic derived far greater benefit from his course, for the reason that he was required to study more to hold his ground, often against the combined opinion of his class.

After going along in this way for a time it be-

came apparent that our faculty should be changed from time to time, in order that the teachers should become proficient in more than one subject. I desire to report to you that we found this most satisfactory, and that it has resulted in a marked improvement in the attainments of every member of our profession, which means of course of the profession as a whole.

The social feature of our plan has done as much, if not more, for the good of the profession, as the scientific work. I am now able to say that we have no one in this county not on the most friendly terms with each other, and that such condition is because they actually desire to be friendly.

In addition, we have kept up our regular society meetings, always with increased interest, and although ours is not one of the large counties, I feel safe in saying that we have one of the best, if not the best, society in the State of Indiana, and we are resolved to go on and make it still better.

In connection with this work it did not take us long to determine that, in consideration of the increase in the cost of living in recent years, we were not being adequately paid for our services, and we concluded that it was only just that the scale of fees should be increased one-half. In order that this might be uniform, we all signed the schedule definitely fixing the price of services for both day and night and had this published. It went into effect without a single ripple, and has been strictly maintained. I have never heard a complaint on the part of the public or of the agreement being violated by any member. In fact, the public seems to understand the necessity for the change, largely for the reason that it knew we were making an heroic effort to give the people better service. The results have been that our incomes have been increased by one-half, and that night work has been reduced to a minimum, giving us the evenings for post graduate work and to spend with our families. While we have not accomplished all that we set out to do, we have certainly made rapid progress, and are not to stop or falter until our ideals are attained.

Probably this very crude plan might be greatly elaborated and improved, but it has worked so well, and given such universal satisfaction here that I am sure none of us would be willing to disturb the present satisfactory condition.

Can you be able to use what we have done as an incentive for success or to elaborate it for the promotion of medical organization, you will have the very best wishes of every member of our profession in doing so. With personal best wishes, I am,

Most sincerely yours,

DAVID J. LORING, M. D.

Miscellaneous.

REGULAR MEETING OF THE STATE BOARD OF HEALTH.

The regular meeting of the State Board of Health was held in the Secretary's office at Lansing, Michigan, January 12, all the members of the Board being present, as follows: President Victor C. Vaughan, M. D., Ann Arbor; Charles M. Ranger, A. B., Battle Creek; Aaron R. Wheeler, M. D., St. Louis; Angus McLean, M. D., Detroit; Malcom C. Sinclair, M. D., Grand Rapids; Hon. Coleman C. Vaughan, St. Johns, and Frank W. Shumway, M. D., Secretary.

After the disposal of the routine business, reading of the minutes, auditing of bills, etc., the following important work was taken up and passed on:

On suggestion by the Secretary, it was decided by the Board that hereafter the title of the official organ of this Department shall be "Public Health, Michigan." All pamphlets and bulletins issued by this Department, including the Teachers' Sanitary Bulletins, will be issued under this head, and will be bound in attractive covers and in suitable form to insure preservation. This method has been adopted by reason of the substantial saving in postage that will result, it being estimated that the postage of the Department will be reduced fully one-half thereby.

The Board decided to coöperate with Prof. Delos Fall, of Albion College, a former member of this Board in an endeavor to ascertain from the analysis of the uncontaminated spring waters of the state a definite chlorine standard for a pure water, a sum of money being set aside out of the appropriation to defray expense of carrying on this investigation.

A Committee of the Board on Public Water Supplies was appointed, comprising Doctors Vaughan, Sinclair, and Shumway, to coöperate with a similar committee from the State Engineering Society and State Medical Society in an endeavor to secure legislation to invest a commission with power to investigate and advise regarding public water supplies.

The Board authorized the Secretary to prepare and publish a separate pamphlet on Disinfection, giving the different methods of disinfection now in use, and advising in detail how to proceed in this matter. This has been deemed necessary for the reason that many of the local health officers, as well as physicians

and the public generally are not familiar with disinfectants and their use.

The Board decided to make the examination for embalmer's license both written and oral, using the cadaver in connection with the oral work.

The proposed plans for a new sewer system for the Michigan Soldiers' Home, Grand Rapids, were considered and approved by the Board.

EXTRACTS OF MINUTES JANUARY MEETING OF COUNCIL, MICHIGAN STATE MEDICAL SOCIETY.

On January 12th the Council met in the parlors of Hotel Cadillac at Detroit, and was called to order by Secretary Haughey who requested that a temporary chairman be appointed. Dr. C. B. Burr, of Flint, was made temporary chairman and later unanimously elected as Chairman of the Council to fill the unexpired term of Dr. Leartus Connor, resigned.

The Secretary's Report, containing several recommendations, was then read, which we abbreviate as follows:

"Since our last Annual Meeting several changes have taken place in the personnel of the Council. Four new names appear on our roster and four old, familiar ones are not to be seen there. While we regret the loss of the old, we welcome the advent of the new, and bespeak for the Council more energetic and vigorous work as a result of the change. Thus it is ever: the work goes on but the worker drops out. When the tired head and hands refuse to longer respond to the strenuous demands upon them, others fresh and vigorous arise, assume the burdens and bear them on toward the ultimate goal; until they too in turn sink by the way and must give place to succeeding workers. Human endeavor only succeeds at the expense of a succession of workers, each doing his share then dropping out happy in the knowledge of what he has accomplished for the general good.

"The good done by the ex-members of this Council cannot be measured by human skill. Suffice it to say: they have done their best; they have earned their reward, may it be ample. The remaining members trust that they may long be spared to the Michigan State Medical Society where their wisdom will aid in the great work of that organization.

To the new members we can only say: There is much more work ahead, give it your best thought."

RECOMMENDATIONS.

That the present form of report blanks for use of County Secretaries, which seem to be almost ideal, be continued as the official blank for these reports.

That more active work be required of the Financial Committee; that all contracts and bargains requiring the expenditure of money receive its approval; and that its Chairman be required to countersign all treasury warrants.

That the strong competition for business, caused probably by a surplus of Doctors, has resulted in many instances in a great disregard for professional ethics is a matter of common observation to the most of us. It has occurred to us that greater stress should be laid on teaching ethics in our medical colleges than has heretofore been done. We would suggest that the Chairman of this Council incorporate in his report to the House of Delegates a request that the Michigan State Medical Society consider the advisability of recommending that medical colleges add to their curriculum a Chair, or at least a branch, of Professional Ethics; that this subject should be taught in such a manner as to inspire the pupil with an understanding that his honor is involved in maintaining the ethics of the profession, in the same manner as individual honor has always been involved in questions of right and justice.

The General Secretary's Report showed cash from all sources for the year, \$6243.14; expenditures for the Journal, \$4265.26; for the State Society, \$772.42. Cash in Treasurer's hands December 31, 1905, \$1205.46.

EXCERPTS.

"The Journal is now entering upon its fifth volume. Experience clearly proves that the State Journal occupies a field of usefulness permanent in character. Its space is in constant demand, and we are unable to fulfill its purpose of publishing all the material read at the various State, District, and County Medical meetings. To publish all such material would tax the finances of the Society beyond conservatism.

"I would earnestly suggest that the Council consider the possibility and advisability of using the very large exchange of medical journals, both in this country and abroad, and

the latest books received as a nucleus for the formation of a library in connection with the Michigan State Medical Society. I would also suggest that the Council appoint a custodian of the journals and other material now in the hands of the Secretary-Editor, and recommend to the House of Delegates the election of a Librarian.

"The membership of the County Societies as a whole shows a slight increase. The total circulation, today, of the Journal to members is 1,854, being an increase during the year of 76.

"At the last meeting of the Council I was instructed to issue to the Secretaries of the various County Medical Societies a report blank, which is ideal in character; such reports to be tabulated by the General Secretary for the information of the Council at this meeting. I regret to state that a sufficient number has not at this date been received to warrant any definite tabulation, and I submit these twenty-five as received. The constant change of officers of County Medical Societies renders a more exact reporting almost impossible, until by years of experience all who assume the obligations of office shall realize the necessity of business-like reports. Many of the County Secretaries are very prompt in all matters pertaining to their own society and the State; others do not know what business methods are. A Card-Index system has been inaugurated in this office, which when completed will enable the Secretary to report definitely upon the membership of each County Society.

"While many believe that the value of the organization rests with the County Medical Society and that the meeting of the State Medical Society, occurring but once a year, is merely an incident, I believe that it is a most important factor in keeping alive organization and interest. It is, therefore, our duty to do all possible to render its gathering as profitable and attractive as possible, and I would ask for the consideration of the following problems:

1. Is the three days' meeting of the State Society a success?
2. Would it be better to abolish the orations; have the House of Delegates meet the evening before; and have the Scientific Sessions limited to two days?
3. What arrangements can be made to secure better attendance upon the Section meetings?
4. What arrangements can be made to hold

the members in attendance upon the afternoon of the last day?

5. Shall we return to the former method of reporting discussions of papers in the sections?

"In closing I deem it my privilege to express to you my sincere appreciation of the confidence you have imposed in me during the trying period of reorganization, and of the aid you have always extended me in every matter which I have brought to your attention. I desire also to express my thanks to the various officers and members of the State and County Medical Societies, and to those who have worked with me in the building up of our Journal. The work has been very arduous and never could have been accomplished had you not extended to me every courtesy within your power. My reward has been the satisfaction I feel that I have met in a slight degree at least with your approval, and my greater reward has been the intimate friendship with the officers of the various societies and the acquaintance of the profession at large.

"In relinquishing the office I wish it thoroughly understood that I do not relinquish my interest in the work but simply the responsibility of detail, which advancing years and other duties, both professional and personal, demand. I am ready ever to serve you in any possible way agreeable to you.

Respectfully,

A. P. BIDDLE,
General Secretary.

President Inglis asked the opinion of the Council as to the reply he should make to a letter he had recently received from the Secretary of Kent County Medical Society asking his advice as to the propriety of accepting an invitation from the Homeopathic Medical Society in Grand Rapids to meet with them in joint session. After some discussion a committee was appointed to consider the relation which our organization bears to the homeopathic and other organizations. Chair appointed Drs. Herdman, Dodge and Bulson as this committee.

Here a recess was declared for luncheon.

AFTERNOON SESSION.

Dr. Dodge, Chairman of Financial Committee, reported that the committee had examined the books of the Secretary and Treasurer for the year 1905 and found the same to-

gether with the reports submitted correct; and recommended that the discussions of section meetings of the State Society be reported at the coming Jackson Meeting. Report accepted and adopted.

Dr. Haughey, Chairman of Committee on County Societies, submitted a report substantially embracing the recommendations made in the reports of the General Secretary and Secretary of the Council. Report accepted and adopted.

The Publication Committee submitted a portion of its report and asked for more time, which was granted.

Reports were then received from the several Councilors as to conditions in their respective districts, which showed the work throughout the state to be in good condition and advancing in scientific interest. Among other things Dr. Dodge presented a letter from Dr. McCormick, National Organizer, stating that he would be glad to visit Michigan if it could be arranged so that he could go from one district to another as rapidly as possible, and moved that the matter be referred to the Secretary of the State Society with the request that he endeavor to make out such itinerary. Supported and carried.

This closed the routine business and the Council proceeded to the election of Secretary and Treasurer of the State Society, which resulted in the choice of Dr. B. R. Schenck, State Secretary, and Dr. Geo. W. Moran, Treasurer.

Dr. Dodge moved that the Secretary-Editor and Publication Committee be instructed to advertise for bids for printing the Journal and, all questions of economy being duly considered, let the contract to the lowest responsible bidder. Carried.

A resolution of thanks was extended to Collier's Weekly and Ladies' Home Journal for the unselfish interest in the public weal displayed in their forceful and determined attacks upon nostrums and nostrum vendors.

Dr. Schenck was here introduced and thanked the Council for the honors conferred upon him by electing him to the office of State Secretary.

This closed one of the most successful and satisfactory sessions of the Council that has ever been held, in which more business was transacted in shorter time than at any previous meeting.

W. H. HAUGHEY,
Secretary of Council.

CHANGES IN MEMBERSHIP NOV. 1ST TO JAN. 1,
1906.

NEW MEMBERS.

Ladooski, R. J., Detroit.
Worden, A. L., Detroit.
Babcock, W. L., Detroit.
Pearson, Hamburg.
McGarvagh, J., Fowlerville.
Erwin, W. H., Oak Grove.
Huber, E. G., Iosco.
McClellan, Lela French, Benton Harbor.
Emmons, J. W., Buchanan.
Barstow, W. E., St. Louis.
Stealey, Albert, Alma.
Enders, W. H., Eaton Rapids.
Ellis, C. W., Eaton Rapids.
Starker, C. T., Saginaw.
Johnston, O. G., Otter Lake.
Hubel, J., Detroit.
McComber, A., Detroit.
Eastabrook, B. R., Reech.
Moir, A. J., Detroit.
Caughey, M. D., Detroit.
Aronstam, N. E., Detroit.
Stockwell, G. W., Detroit.
McGraw, Theo., Jr., Detroit.
King, H. H., Colling.
Sugnet, W. J., Gagetown.
Robertson, Colin G., Sandusky.
Weed, J. W., Brown City.
Tweedale, A. W., Shalbona.
Long, D. G., Eaton Rapids.
Gordon, Homer E., Hamburg.
Franklin, B. L., Millbrook.
Watley, Samuel, Blanchard.
Long, Chas. B., Fremont.
Ellison, Gayfree, Muskegon.
Powers, Lunette I., Muskegon.
Griffen, W. L., Shelby.
Davidson, R. J., Shelby.
Gillott, H. C., Pontiac.
Conlen, J. E., Munith.
Cochran, L. E., Peck.
Lewis, Henry J., Chicago, Ill.
Murphy, Norman D., Bangor.
Payne, E. M., Grand Ledge.
Larson, John, Negaunee.
Mohler, C. D., Hastings.
Francis, A. M., Port Arthur.
Hill, S. R., Greenlief.
Simpson, Dr., Harbor Beach.
Osborne, Samuel, Lansing.
Penoyer, Frank, South Haven.
Browning, Eugene S., Grand Rapids.
Culver, M., Battle Creek.

Kesley, E. H., Battle Creek.
Gates, G. A., Battle Creek.
Hodges, Lenna, Tekonsha.
Marsh, W. C., Albion.
Foster, J. C., Albion.
Tompson, J. A., Homer.
Maxwell, W. A., Hudsonville.
Boot, T. A., Holland.
Eames, Lucy N., Muskegon.
Gray, E. G., Ludington.
Bradley, J. B., Grand Ledge.
Niles, B. D., Grand Ledge.
Peppler, J. F., Graafschaaf.

CHANGE OF ADDRESS.

Bishop, W., Salt Lake City, Utah.
Banks, H. W., Springport.
Pearson, C. B., Schwartz Creek.
Eaton, R. R., Lowell.
Redner, L. R., Dayton, Wash.
Kirtan, J. R. W., Laurium.
Fralick, F. J., Greenville.
Elmer, W. P., St. Louis, Mo.
Roneburger, G. F., Milwaukee, Wis.
Carr, Henrietta A., Ashtabula, O.
Hawkey, J. W., Alanson.
Harris, D. C., Frontier.
Logan, Chas. W., Detour.
West, Arthur E., Pasadena, Cal.
Howard, J. J., Detroit.
Harper, Wm. A., Detroit.
Bottom, C. N., Birch.
Sheffield, F. G., Hastings.
Roos, D. W., Manistique.
Kingsley, A. F., Battle Creek.
Cook, D. G., Holland.
Imus, H. L., West Olive.

CLINICAL ASPECTS OF RHEUMATIC
ENDOCARDITIS.

J. D. Morgan calls attention to the necessity for greater care in the examination of patients having acute articular rheumatism in order to detect immediate or remote endocardial disease at an early date. Both patient and physician he says, often remain long unaware of any cardiac lesion. An investigation of the records of several hospitals and dispensaries showed that about 15 per cent. of cases suffering from rheumatism were systematically examined. The proportion of heart lesions following rheumatic attacks is about 50 per cent. Another feature of interest shown was the greater preponderance of rheumatic patients in dispensary rather than in hospital work owing to tendency of rheumatics to keep up and about as long as possible. While there were three times as many women with rheumatism in the hospital wards as in dispensaries, there were double the number of men seeking dispensary treatment for the same disease as there were in the institutions.—*Medical Record*, January 13, 1906.

Book Notices.

A COMPEND OF MEDICAL CHEMISTRY. Inorganic and organic, including urinary analysis by Henry Leffman, A.M., M.D., Professor of Chemistry in the Woman's Medical College of Pennsylvania, and in the Wagner Free Institute of Science. Fifth revised edition. P. Blakiston's Sons & Co., Philadelphia, 1905. Cloth, \$1.00 net.

This little volume is very well gotten up, and is a complete one for a compend. This is vouched for by the fact that it is now in its fifth edition. The author in his preface defends the use of compends as follows: "It has been said that Alexander Pope is a poet whom everybody quotes and nobody reads. It may be said of compends that they are books that most professors and reviewers condemn and that nearly all students use. The truth is, that in the present systems in professional schools, students are obliged to meet two distinct requirements. They must study for the knowledge necessary for the practice of the profession and they must study to pass examinations. The latter are in so many cases arbitrary in scope, and affected by the personal equation of the examiner, that the student cannot be blamed for resorting to a concise presentation of the more important facts of the science, supplementing this by notes of the narrower and more strictly personal items of the teaching." The author also defends his selection of the title, "Medical Chemistry," by stating that the student of medicine needs a different presentation of the subject of chemistry than the student of engineering, for instance, even though the fundamentals of the science are the same. He believes that there is much to the subject that is not necessary to the medical man, and that the best way to teach the subject to this class of students is to use a carefully arranged text book that eliminates much of the foreign matter. The book should receive a wide circulation among those for whom it is intended.

GALL-STONES AND THEIR SURGICAL TREATMENT. By B. G. A. Moynihan, M.S. (London), F. R. C. S., Senior Assistant Surgeon to Leeds General Infirmary, Leeds, England. Second edition, revised and enlarged. Octavo of 458 pages, beautifully illustrated. Philadelphia and London. W. B. Saunders & Company, 1905. Cloth, \$5.00 net; Half Morocco, \$6.00 net.

The first edition of Mr. Moynihan's work on gall-stones was completely exhausted in eight months. Mr. Moynihan, by his masterly presentation of operative technic and clear, logical discussion of indications and contraindications, has won an enviable place in contemporary abdominal surgery. In this edition, increased in size by some seventy pages, many additional case records have been incorporated and a number of new illustrations added. We note also the addition of a very valuable chapter—Congenital Abnormalities

of the Gall-Bladder and Bile-Ducts. It is evident that the whole text has undergone a careful revision and all recent work along the line of gall-stone surgery included. Mr. Moynihan's book still holds first place in its field. The illustrations are very beautiful, especially the nine colored plates.

DOSE-BOOK AND MANUAL OF PRESCRIPTION WRITING: with a List of the Official Drugs and Preparations, and the more important Newer Remedies. By E. Q. Thornton, M.D., Assistant Professor of Materia Medica, Jefferson Medical College, Philadelphia. Third edition, revised and enlarged, 12mo, 392 pages, illustrated. Philadelphia and London: W. B. Saunders & Company, 1905. Bound in flexible leather, \$2.00 net.

A glance at the contents of Dr. Thornton's book fully explains its attainment of a third edition. In addition to the consideration of the official and the more important nonofficial preparations intended for internal administration, weights and measures, solubilities, and incompatibilities, attention is given to the grammatic construction of prescriptions, illustrated by examples. In revising the text for this edition Dr. Thornton has made it conform with the new (1905) Pharmacopeia, the radical change in strength or name of many chemicals, drugs, and preparations already official, and the admission of many newer remedies necessitating the rewriting of a number of sections. We notice in the Appendix an addition of much value—a table showing the change in strength of important preparations, and also a list of average doses for adults in accordance with the new Pharmacopeia. Dr. Thornton's Dose-book is, as it always has been, accurate and up to date.

SAUNDER'S QUESTION COMPENDS.

ESSENTIALS OF MATERIA MEDICA, THERAPEUTICS, AND PRESCRIPTION WRITING. By Henry Morris, M.D., College of Physicians, Philadelphia. Seventh Edition, Thoroughly Revised. By W. A. Bastedo, Ph.G., M.D., Instructor in Materia Medica and Pharmacology at the Columbia University (College of Physicians and Surgeons), New York City. 12mo, 300 pages. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$1.00 net.

The student cannot find a better or more practical work on Materia Medica, Therapeutics, and Prescription Writing than this little essential from the press of W. B. Saunders and Company. But then, this work is no exception in this respect to all the other numbers of this excellent series of compends. Dr. Bastedo, in revising the book for this seventh edition, has brought it in accord with the new (1905) Pharmacopeia, introducing all the new remedies and carefully indicating their therapeutic doses and uses. For a work of three hundred pages it contains a mine of information so presented as to be easily grasped. We give it our unqualified endorsement.

A TEXT-BOOK ON MODERN MATERIA MEDICA AND THERAPEUTICS. By A. A. Stevens, A.M., M.D., Lecturer on Physical Diagnosis, University of Pennsylvania; Professor of Pathology, Woman's Medical College of Philadelphia. Fourth Edition, Revised. Octavo of 670 pages. Philadelphia and London: W. B. Saunders & Company, 1905. Cloth, \$3.50 net.

The new fourth edition of Dr. Stevens' excellent work on practical therapeutics appears at a most opportune time, close upon the issuance of the Eighth Decennial Revision of the Pharmacopeia to which it has been adapted. Dr. Stevens, by his extensive teaching experience, has acquired a clear, concise diction that adds greatly to his work's pre-eminence. New articles have been added on Scopolamin, Ethyl Chlorid, Theocin, Verronal, and Radium, besides much new matter to the section on Radiotherapy. The numerous changes in name or strength of various drugs and preparations, as called for by the new Pharmacopeia, have also been made. In fact, it is somewhat difficult to speak of Dr. Stevens' Therapeutics without resorting to the frequent use of superlatives, for of all the good works on this most important of subjects, this book before us is undoubtedly the very best.

FEEDING RULES FOR HEALTHY INFANTS. By Charles Douglas, M.D., Professor of Children's Diseases and Clinical Medicine, Detroit College of Medicine; Consulting Physician to Harper Hospital; Senior Physician to the Protestant Orphan Asylum; Member of the Ohio State Pediatric Society; American Medical Association and Michigan State Medical Society. Educational and Recording Charts showing practical percentage feeding without Laboratory Assistance. Baby Book Co., Publishers, Detroit Mich., 1906. Net \$1.00, at J. F. Hartz & Co., and A. Kuhlman & Co., of Detroit.

This book treats all the different phases in nursing and hand fed infants. It shows hand feeding done with many varieties of cow's milk, and is unique inasmuch as it presents the combined results of many mothers educated by the author to feed properly. His chart system whereby these mothers note daily all foods and their effects, has accumulated a large amount of information, from which this book is largely compiled. Many new features have, in this way, been worked out, thus greatly simplifying the art of hand feeding.

The seven food schedules show the foods given every week, the age of the infants, and the resulting advances in weight. In this way, a suitable diet for infants at any weight and age can be seen at once.

The book contains 279 pages of reading matter divided into ten chapters. To help the reader, the author has made the ninth chapter a summary in condensed form of all the facts in the previous eight chapters. The tenth chapter treats of the dietary of infants during the second and third years.

The book is written in a clear and easily under-

stood language, and would seem to be invaluable to a mother who has trouble with the feeding of her baby and also to the physician who practices among the very young. We bespeak for the book the great success which it so well merits, and congratulate the author upon the attempt to put before the mothers of America some tangible method by which they can raise their little ones, even when the advantages of a laboratory are denied them.

DIFFERENTIAL DIAGNOSIS AND TREATMENT OF DISEASE, A Text Book for Practitioners and Advanced Students, by August Caille, M. D., Fellow of the New York Academy of Medicine; Member and Ex-President of the American Pediatric Society; Professor of Diseases of Children; New York Post-Graduate Medical School and Hospital; Visiting Physician to the New York Post-Graduate and German Hospitals; Consulting Physician to Isabella Home and Hospital, etc. 228 Illustrations in the text. Cloth \$6.00 net. D. Appleton & Company, publishers, New York and London, 1906.

Dr. Caille's book represents an attempt to re-establish the various branches of medicine in their true relation, side by side, as they should be of use to the general practitioner, rather than the specialist. The different diseased conditions in the whole range of medicine and surgery are handled in a concise and clear manner. The subheadings are printed in heavy faced type, making reference easy. All non-essential detail and especially the speculative detail is omitted, making this work of especial advantage to the busy practitioner. The book is especially strong in the matter of treatment, giving treatment that has been tried and proved rather than theoretical. Reference is easy, owing to a remarkably good index. A short synopsis of the contents of the book is here given.

INTRODUCTION: The Requisites of the General Practitioner, his relation to the community and to specialism.

1. Technique of Diagnosis and the Clinical Laboratory.

2. General Therapeutics.

3. Pediatrics.

4. THE DIGESTIVE SYSTEM: Nutrition and Diet, Diseases of the Organs of Digestion, Gastrological and Proctological Memoranda.

5. THE CIRCULATORY SYSTEM: Diseases of the Organs of Circulation, of the Blood, the Lymphatic System, Management of Dropsy and Effusion.

6. THE RESPIRATORY SYSTEM: Diseases of the Organs of Respiration, Rhinology and Laryngological Memoranda and Formulary.

7. THE GENITO-URINARY SYSTEM:

Diseases of the Genito-Urinary Organs, Urological and Gynecological Memoranda.

8. Diseases of the Bones, Muscles, Joints, Orthopedic Memoranda. Remarks on Massage, Vibration, Dry Hot-Air Treatment.

9. Infective Fevers and Methods of Prevention and Disinfection.

10. Faulty Metabolism and Diseases of the Ductless Glands.

11. Neurological Memoranda. Remarks on Electricity and its Therapeutic Uses.

12. Dermatological Memoranda and Formulary.

13. Ophthalmological and Otological Memoranda and Formulary.

14. Anaesthesia, Poisons and Antidotes, and Miscellaneous Disorders.

15. Keeping Case Records and Accounts.

16. Index.

MAN AND HIS POISONS, A Practical Exposition of the Causes, Symptoms and Treatment of Self-Poisoning, by Albert Abrams, A. M., M. D. (Heidelberg), F. R. M. S., Consulting Physician Denver National Hospital for Consumptives, The Mount Zion and the French Hospitals, San Francisco; President of the Emmanuel Sisterhood Polyclinic; Formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College, San Francisco. Illustrated. New York, E. B. Treat & Company, 1906. Cloth, \$1.50.

In the first chapter Dr. Abrams gives the various views of life, the Chemistry of life, the experiments of various investigators as regards the different functions of life. He treats further in the book of the antecedent history of self poisoning, and dwells especially upon the power of the mind over the body in the matter of self poisoning and disease. Fatigue, the toxicology of emotion and sleep, and the chemistry and physics of thought are considered at length. The symptoms of self poisoning are presented in a manner in keeping with the careful arrangement and presentation of the facts throughout the book. Under the treatment of self poisoning especial confidence is placed in the sinusoidal current. The book is well written, attractive in appearance, of a convenient size, printed from clear, easily legible type, and contains 258 pages, with many original illustrations.

THE DIAGNOSTICS OF INTERNAL MEDICINE. A clinical Treatise on the Recognized Principles of Medical Diagnosis, prepared for the use of students and practitioners of Medicine. By Glentworth Reeve Butler, Sc. D., M. D., Chief of the Second Medical Division, Methodist Episcopal Hospital; Attending Physician to the Brooklyn Hospital; Consulting Physician to the Bushwick Central Hospital; Formerly Associate Physician, Departments of the Diseases of the Chest and Diseases of Children, St. Mary's Hospital, Brooklyn; Fellow of the New York Academy of Medicine; Member of the Medical Society of the County of Kings; Fellow of the Society of Science, Letters and Arts

(London), etc. Second revised edition. D. Appleton & Company, New York and London, 1906.

This book is devoted entirely to diagnosis, and draws upon all branches of science which will aid. It is divided into two parts. Part I takes up in detail the signs, symptoms, facies, etc., of disease, discusses them, gives the method of eliciting them and gives their significance, with the diseases which they might suggest. Whenever a plate or diagram will help in making a point clear that plate or diagram is used, no expense being spared to make a thoroughly up-to-date and reliable work. The microscopical examination of the urine, feces, stomach contents, sputum, and blood are dwelt upon at some length.

Part II discusses the different diseases and gives their symptom complexes, referring to part I when necessary. The direct and differential diagnosis is gone into in detail, with a word or so occasionally about prognosis. For a work on diagnosis this is one of unusual merit, and the subject matter is exceedingly well handled as regards its selection, arrangement, and presentation. The book is attractively bound, printed in good readable type, and profusely illustrated.

SURGICAL SUGGESTIONS.

Gastric lavage is the best post-operative anti-emetic.

In cases of unaccountable fever, especially in children, never fail to examine the ear.

If a male patient with supposed strangulated hernia complains of pain running down the inner aspect of the thigh it is well to think of torsion of the testicle.

After an operation for hemorrhoids it is desirable to insert into the rectum a tampon canula, made by smearing with vaseline gauze layers wrapped about a piece of rubber tubing about three inches long and transfixed at its distal extremity with a large safety pin. The tampon canula prevents oozing by its gentle pressure, allows any considerable hemorrhage to show itself externally, makes the escape of flatus painless and the introduction of an oil enema easy.

Examine the rectum in all cases of tumor of

the liver. Likewise, before operating for cancer of the rectum extirpate the liver for metastasis.—*American Journal of Surgery.*

Progress of Medical Science.

MEDICINE.

Exile and Drugs in the Treatment of Tuberculosis.—A. Jacobi (New York) says the treatment of tuberculosis should be hygienic, dietetic and medicinal. Pure air and good food, and enough of it, are indispensable. That is what sanatoria are erected for. But their number is small compared with the vast number of cases of incipient and advanced tuberculosis. It is mainly the latter that disseminate and propagate the disease; it is these patients who should be taken care of at public expense in behalf of the protection of the public at large. Removal from the airless and lightless dwellings of large cities is, when possible, a necessity. Young men with no families depending on them should be advised to go south or southwest and to make a living there. Advanced cases, and those patients unable to find work, amongst the poor, should not be told they must leave. They have not the means to travel or live in "Colorado," "Denver," "the mountains," and to tell them, as it is done too often, their case is hopeless unless they change climate immediately, is reckless and cruel, and unworthy of a physician not deprived of conscience and humanitarian instinct. A poor consumptive, when about to die, should rather die amongst his own than in the streets or the attics of a strange town thousands of miles away. Even the tuberculous and the consumptive patients (the terms are not synonymous by any means) may be benefited at home. Cod liver oil is probably active beyond its effect as a fat. Arsenic is a good tissue builder and may be given in moderate doses (the trioxid-arsenous acid) for many months in succession. It has been considered as a "nutritive" for generations. Cardiac stimulants should be taken regularly for indefinite periods, for instance the equivalent of 3, 4 or 5 grains of the herb daily, divided into 3 or 4 doses—no "cumulation" need be feared—or spartein sulphate 2 to 5 grains daily (which are easily borne and readily eliminated.) For 15 years past guaiacol has been given by the author in thousands of cases, with good results. Expectoration becomes more mucus, cough looser, and weight increases. All that happens in the average cases amongst the poor, and should not be neglected by the rich, and by the sanatoria, which should add medication to their hygienic and dietetic (and gentle gymnastic) and cautious hydropathic treatment. Max Schöller, who has introduced guaiacol into the treatment of tuberculosis forty-five years ago, employs it also in tuberculosis of the bones and joints, inter-

nally and, with iodoform and glycerin, in injections. Lately he published two bad cases of renal tuberculosis which got well under protracted guaiacol treatment without an operation. The author never relies on local treatment alone in chronic osteitis and arthritis.—*American Medicine*, December 23, 1905.

Tonsillitis.—R. M. Niles, in discussing the treatment of this affection, says that the patient should be isolated, should receive broken doses of calomel, followed by a saline laxative or croton oil, quinine in tonic doses. Strychnine, aconitine, sodium salicylate, guaiac and anodynes may also be required. Hot alkaline gargles and a spray of hydrogen peroxide are useful. Chlorate of potassium has little value. Often the application of the tincture or vinegar of capsicum produces the most brilliant results. Congestion and edema are reduced, the separation of sloughs is facilitated, granulations are stimulated, vasomotor inertia is overcome, and normal tissue metabolism is re-established. Tincture of capsicum, full strength or diluted with cod-liver oil should be applied to the Schneiderian mucous membranes in the treatment of the rhinitis, which is a frequent concomitant of the tonsillar involvement. The nasal mucosa is first cocaineized, and the capsicum is then applied with a cotton-covered applicator.—*Medical Record*, December 23, 1905.

The Treatment of Bronchopneumonia.—Samuel A. Visanska says that the first requisite is to get the confidence of the family. Abundant fresh air must be secured by having the windows opened above and below, and if possible an apartment with a fireplace should be chosen as the sick room. Of the many external applications recommended he prefers the hot mustard bath. The child should remain in it till there is a pink glow over the body, and should then be wrapped in a blanket and placed in bed, when, as a rule, it falls asleep. At the same time the high nervous tension is relieved, the child breathes more easily, the pulse is not so rapid, the capillaries dilate, and the little patient often breaks out in a copious perspiration, which carries off the toxins, thereby throwing less work on the heart, kidneys, and intestinal canal. These baths should be repeated as often as necessary. Hot camphorated oil, with mustard rubbed into the chest, is an efficient application if pleurisy is a prominent symptom. Several prescriptions for cough mixtures are given. Whiskey and strychnine are the two preferable stimulants, and when the pulse is above 130 tincture of digitalis is used, which has proved very valuable in the author's experience. It is advisable not to give the patient any water for several minutes after swallowing the dose of digitalis, which may be administered in a few drops of syrup, as water precipitates digitoxin. If the child is not breast-fed, broth, beef, milk, and egg albumen will constitute the principal articles of diet.—*Medical Record*, December 16, 1905.

SURGERY.

Displacement of the Abdominal Organs.—

Otto Lerch in considering the subject of prolapse of the various abdominal organs lays much stress on the neurotic element both in the etiology and symptomatology. The affection may be congenital and is often hereditary; it is most frequently predisposed to by relaxation of the abdominal found in all cases, and nervous symptoms pre-walls, such as often follows childbirth. The disturbance of the nervous system is practically sending the picture of hysteria and neurasthenia are always present. The trouble can only be developed on an inherited basis of neuropathic constitution. After describing the protean nature of the symptoms attending displacement of the stomach, colon, kidneys, liver, or uterus, the author presents several case histories illustrating pronounced phases of these disorders. The treatment, he says, should be prophylactic by means of abdominal exercises and the use of a bandage if predisposition is recognized, and the same two measures must be employed if the trouble is already present. The author describes his own bandage, which is provided with anterior and posterior pads and with leg straps. Diet adapted to the condition of the stomach and intended to replace the lost fat, and rest, are the next requisites, as well as massage and mild hydrotherapeutic measures. Tonics and suitable exercise are also of value. The advisability of operative treatment requires careful consideration, for often the visceral dislocation is only part of the trouble, for the severity of the suffering does not depend on the degree of dislocation, and correcting operations have been in many cases without any or without permanent result. If the defect to be corrected contributes to the trouble, and medical treatment has failed, an operation is indicated.—*Medical Record*, December 9, 1905.

Postoperative Nausea and Vomiting.—

Lawrence E. Holmes (Asheville, N. C.) from a study of a series of 100 cases concludes that, as a rule, postoperative nausea and vomiting are less dependent on the anesthetic than on other causes; for instance, sex, or a nervous disposition. The amount of postoperative disturbance seems to bear a more or less definite relation to the nature of the operation. The common teaching that the administration of ether is followed by nausea and vomiting much more frequently than is chloroform is to a great extent erroneous. The proper preparation of the patient has much to do with the after-effects, and the after-treatment is of the utmost importance. The degree of gastric

disturbance following etherization has no relation whatsoever to the amount of ether used.—*American Medicine*, December 23, 1905.

The Dumb Bell Intestinal Anastomosis.—

J. B. Bacon, Macomb, Ill. (*Journal A. M. A.*, January 6), describes a new device for intestinal anastomosis, consisting of a hollow, dumb bell shaped aluminum bobbin, over which the invaginated intestinal walls are tied through a counter opening which is afterward sutured. Detailed descriptions are given of the methods for the various kinds of anastomosis, end to end, lateral and gastroduodenal. The following advantages are claimed for the appliance: Simplicity of construction and operation; absolute safety against leakage; quickness of application; impossibility of lodgement in the intestine; non-necessity of reinforced sutures; minimal amount of cicatricial tissue remaining. The article is illustrated.

The Short Narcosis, the Short Incision and the Short Stay in Bed After Ideal Operations.

—Bayard Holmes (Chicago, Ill.), from a wide experience, has become a strong advocate of short narcosis, short incision and short stay in bed after ideal operations. He believes too much time is often spent by the patient on his back after operation, and too little by the surgeon at the bedside and in the laboratory before the operation. In order to make the stay of the patient short after surgical intervention, he should be studied in the hospital for days or even weeks before operation is undertaken. Dr. Holmes has found that patients can readily be kept anesthetized the necessary 20 minutes or half an hour by the employment of gas with only occasional resort to ether. In a few instances, on account of obesity, chloroform has been used to continue the anesthesia. The short incision is one of the dictates of good surgical judgment, as it inflicts the minimum amount of traumatism and gives adequate access to the field of operation. With the small incision, the complications which the protrusion of abdominal viscera add to the operation are unknown. Operators who have been accustomed to use incisions 4 inches to 6 inches long are surprised to find that they are able to accomplish the same results more rapidly, with less traumatism and with fewer postoperative discomforts to the patient with an incision 2 inches long or 1½ inches long. The duration of the operation is curtailed, the intoxication and the discomforts of the anesthetic are lessened, the danger of hernia is minimized, the necessity of a long stay in bed is obviated, the chances of infection through the introduction of many stitches diminished.—*American Medicine*, December 16, 1905.

GYNECOLOGY AND OBSTETRICS.

Pelvic Measurements in Women.—Ella V. Davis, Chicago (*Journal A. M. A.*, December 2) analyzes and discusses the pelvic measurements of 150 women, 105 American and 45 foreign born. Over 82 per cent. were normal in their measurements, and somewhat over 17 per cent. (26) were deformed. Her general conclusions are: "Deformity occurs often enough to make pelvimetry a practical part of the examination of pregnant women. Generally contracted pelves form by far the most common deformity in American women, though the rachitic pelvis is often present in those who have been artificially or imperfectly breast fed in infancy. Inebriety in the parents is the most constant element toward degenerate types in the deformities studied. The size of the infant can be regulated by diet and exercise if this be carried out strictly for a proper time during the last three or four months of pregnancy." Tables of the various data, pelvic measurements, character of labors, family history of deformed patients, etc., are included in the paper.

Antepartum Measurement of the Fetal Head.—W. S. Stone describes as follows his method of measuring the fetal head through the abdominal walls: The patient is placed in the ordinary dorsal position for an abdominal examination, and the examiner, standing by the side and facing the lower end of the patient's body, first carefully palpates and makes out the position of the head. If it is already engaged in the pelvis, it will not be practicable to measure it, but in such cases it naturally is unnecessary. The occipital and frontal poles are then grasped between the two hands, and an assistant places from below the ends of the pelvimeter between the terminal phalanges of the middle and ring fingers of the examiner, pushing them firmly inward, as the examiner directs. It is essential that the ends of the pelvimeter go between these fingers, because in palpation one naturally places the middle or longest finger nearest the two poles from which the measurements are to be taken. If placed in front of the middle finger, the pelvimeter will slide forward and the measurement will be inaccurate. An assistant or nurse is necessary in order to obtain the best results, in order that the examiner's fingers may be entirely free to accurately locate the fetal parts. A table is given showing the results obtained before and after delivery in forty-one cases measured in this way. In twenty-eight instances the postpartum measurement of the occipitofrontal diameter agreed exactly with the measurements made through the abdominal walls be-

fore labor; in eleven there was an error of 0.25 cm.; in two of 0.50 cm. In another table the average amount to be deducted from each occipitofrontal diameter in order to obtain the biparietal diameter is given. The method is said to be of the greatest utility in determining the nature of the obstetric operation to be practised, and also in determining early in pregnancy whether or not to wait for full term.—*Medical Record*, November 4, 1905.

Modern Obstetric Methods.—J. A. McKenna, Lansdowne, Pa. (*Journal A. M. A.*, December 16), criticizes meddling midwifery, and particularly some recent utterances. Besides the use of thorough asepsis, he emphasizes the following as points deduced from his personal experience: To deliver all cases in the dorsal position, to support the head and perineum by a modification of Merkittschiantz's method, which reduces the danger of lacerations to a minimum, and especially to have the fundus of the uterus grasped before the presenting part is born, and firmly held until the child is delivered and the cord tied. This, he considers, has been the cause of his never having any postpartum hemorrhages, and says that in the great majority of cases it has facilitated the extraction of the placenta. He gives no douches, and he has only used the forceps twice since leaving the maternity hospital shortly after graduation. He has never had to put more than two stitches in any perineal tear. Another important point emphasized is the position of the patient in bed. In most puerperal cases there is a tendency to burrow down and to have the hips and vagina at the lowest point so that septic fluids in the bed or stagnant in the vagina can the more easily infect the womb. To obviate this he keeps the hips well raised from the bed during the whole course of the labor, thus preventing any contamination from return flow of liquids.

Indications and Contraindications to the Use of the Obstetric Forceps.—J. Thompson Schell (Philadelphia), in discussing the indications for the use of the forceps, says that the disproportion between the expulsion force and the pelvic resistance is the chief and most frequent indication, and that a certain amount of experience with a good deal of common sense is necessary to be always able correctly to pick the proper time for their application. As to the contraindications to their use, in cases of hydrocephalic or macerated heads, the forceps are very likely to slip, and these can better be managed by a perforator and the use of the cephalotribe. A head freely movable at the brim should not be considered as calling for the use of the forceps, as version is the first operation.—*American Medicine*, December 30, 1905.

OPHTHALMOLOGY AND OTOTOLOGY.

On Certain Forms of Ocular Tuberculosis.

—Charles Stedman Bull says that tuberculosis of the conjunctiva is much more often a primary disease, the result of an ectogenic infection, even in cases where tuberculosis has already developed elsewhere in the body, than of infection occurring through the blood. But, although tuberculous disease of the conjunctiva is not often secondary to tuberculous disease in other parts of the system, yet it is itself liable to be the starting point of general tuberculosis. An intact normal conjunctiva can, however, never be infected. There must always be a loss of substance, usually a traumatic abrasion. Tuberculosis of the conjunctiva is more often secondary to nasal tuberculosis than primary. The symptomatology and treatment of tuberculosis in the various other anatomical regions of the eye are discussed in detail, and the author draws the following general conclusions: It is doubtful if any case of intra-ocular tuberculosis is ever a primary disease. In cases of doubt, or of very difficult diagnosis, the injection of tuberculin is an efficient aid to diagnosis. There is a general reaction in at least eighty-five per cent. of the cases, and some local reaction in about fifty per cent. of the cases. As a method of treatment, both the old and the new tuberculin have proved practically useless in the writer's experience. It is a remedy which needs careful watching. Surgical intervention in intra-ocular tuberculous conditions of the eye should seldom be done, unless there is considerable pain which tells on the patient's health, because the disease is not primary, and hence excision would remove only one focus of the disease.—*Medical Record*, December 9, 1905.

New Test Types.—C. H. Williams, Boston (*Journal A. M. A.*, October 7), describes a set of test types on a plan first proposed by Dr. John Green, of St. Louis, and arranged according to geometrical progression as recommended by him. The series is more complete than that of the usual Snellen types, being a series of letters with equal intervals between the different lines, but the shapes of letters and most of the Snellen lines are preserved. The letters are arranged on reversible slats or a rotating card, which can be controlled by the operator; the letters are illuminated by a steady electric light. Each line of letters is printed in duplicate with a different arrangement of the letters when reversed; this is a new feature, in test types of this kind.

Etiology of Pigmentous Sarcoma of the Choroid.—J. Hirschberg, Berlin (*Journal A. M. A.*, November 25), believes that malignant tumors, and pigmentous sarcoma of the choroid in particular, are due to various causes in differing types of the disease. He has before published reports of cases in which the sarcoma appeared to originate in congenital patches of pigmentation, and gives an account of a case in which a congenital circumscribed pigment spot in the iris gave rise to a melanotic sarcoma in the same region of the ciliary body of the affected eyeball. These facts, he remarks, agree with the pathologic observations of congenital pigment nevi of the cutis, changing as life advances into melanotic tumors, and with the theory of Cohnheim that congenital peculiarities of cell groups or persistencies of embryonal germs constitute the real predisposition to later development of malignant tumors.

Tinnitus Aurium.—First reporting a case in which operation was contemplated, but not carried out on account of the improvement of the patient, W. S. Bryant, New York (*Journal A. M. A.*, December 9), discusses the propriety of dividing or destroying the auditory nerve trunk for the relief of specially severe cases of tinnitus when it can be determined that this nerve is the seat of the disturbance. He describes a method of procedure suggested by Dr. Carlton Flynt, which he has followed a number of times on the cadaver and which he considers has certain special advantages; he also reviews the reported cases, reproducing some of them in rather considerable detail. He has reached the following conclusions: "1. Carefully selected cases of tinnitus, with nerve stimulus located in the peripheral end of the auditory nerve, offer a good prognosis for cessation of the tinnitus after the section of the eighth nerve. 2. A technic which offers little inconvenience from hemorrhage, no danger from bony spicules and a minimum of evil from compression of the cerebrum, or especially of the cerebellum, gives a good prognosis of recovery from the operation and in selected cases a cessation of the tinnitus. 3. If, after appropriate general and local treatment, grave tinnitus still exists, we are called on to recommend the section of the auditory nerve, provided the source of the tinnitus is believed to lie in the peripheral portion of the auditory nerve. 4. Section of the acoustic nerve will be as effective for the cure of aural vertigo as for peripheral tinnitus."

NERVOUS DISEASES.

Landry's Paralysis.—R. McGregor, Saginaw, Mich. (*Journal A. M. A.*, December 9), reports an interesting case of Landry's paralysis, and discusses its etiology and pathology. While he considers it to be due to a toxemia, specially involving the anterior spinal horns, he thinks it probable that in very virulent intoxication the peripheral nerves may also be implicated in a secondary way, and a multiple neuritic condition co-exist. These are the cases that, perhaps, give most trouble in their diagnosis. The very high mortality of this disease, however, is in striking contrast with those disorders, multiple neuritis and anterior poliomyelitis, with which it is most liable to be confounded. In the case reported, the attack seemed to follow vaccination, it was preceded by chilly sensations, fever, sweatings and vertigo, and the rapidly ascending paralysis within a week from its first appearance had involved all four extremities, the muscles of speech and deglutition and the ocular muscles. There was also cardiac irregularity and dyspnea, but there was no pain or nerve tenderness, and no fever after the stage of onset. The patient slept well and took a fair amount of nourishment. The bulbar symptoms began to improve after two months, but recovery was not approximately complete until after two years and the patient has not yet attained his former weight by 30 pounds. There is still a slight foot-drop, most marked on the right and the knee jerks have not returned. In the treatment the best results seemed to follow the use of a simple solution of the glycerophosphate of iron with small doses of strychnia.

Multiple Neuritis.—D. I. Wolfstein, Cincinnati (*Journal A. M. A.*, December 9), gives reports of four cases of multiple neuritis illustrating the main etiologic types, i. e., those due to toxic agents, such as alcohol, mercury and lead; those due to acute infections; those connected with general diseased conditions of the body, such as rheumatism, diabetes and syphilis; and last, cases due to exposure to cold or developing apparently without determinable cause. He remarks on some points in the differential diagnosis, such as the involvement of motor fibers, the symmetrical character of the paralysis, the usually simultaneous affection of the legs and forearms, usually not extending to the thighs and upper arms and never except in fatal cases involving the abdominal and respiratory muscles. The prognosis, save in the acute grave cases, is relatively good. In patients with chronic alcohol or lead intoxication, with impaired constiutions,

we can hope for only a partial recovery, if any. Rest and appropriate nutrition are the principal indications in treatment. In the early stages the salicylates are useful. Light wrappings and soothing applications for the hyperesthesia are also of use. Special causal affections and intoxications, of course, call for appropriate treatment. Judgment is needed in case of alcoholism as to the continuance or withdrawal of the stimulant. With chronic cases strychnia, arsenic, gentle massage, and the galvanic current may be useful in aiding repair of the nerve and in keeping up the nutrition of the muscles.

The Non-Insane Psychoneuroses.—J. Punton, Kansas City (*Journal A. M. A.*, December 2), proposes the name "psychosomatasthenia" for a large class of morbid mental conditions, including certain hysterical, neurasthenic and various other neurotic manifestations, which, often occurring after exhausting bodily ailments, fall under the care and observation of the general practitioner rather than that of the specialist, and the importance of which is liable to be misunderstood. He considers these as the forerunners of insanity, differing only in degree. Their fundamental nature he considers to be the same, a pathologic lack of inhibitory control of the higher mental directive forces, with consequent nutritional cellular instinctive and physical defects which seriously mar the power of the will, weaken the judgment and intellect, as well as excite or depress the emotional attributes in all degrees of intensity. Their causes are similar, being both congenital and acquired, while heredity, stress and toxicity are the chief factors of each. The psychopathic manifestations dominate, direct the prognosis and most urgently call for treatment. They are curable in their incipency, but become incurable when neglected.

Infantile Paralysis.—P. Le Breton, M. D., Buffalo, N. Y. (*Journal A. M. A.*, January 6), describes the general and special methods and indications for the relief of the deformities and weaknesses resulting from anterior poliomyelitis after the subsidence of the acute stage. He lays down the general principles of treatment and applies them to the various special conditions. Each special deformity or paralysis is mentioned and the particular appliance or treatment required is pointed out, the object being to supplement the generally deficient data of the text-books and to give in concise form the latest methods and practical points of use to the practitioner. In conclusion the various operative methods, nerve and tendon transplantation, arthrodesis, and linear osteotomy are described with their special indications and modifications for different conditions. Le Breton insists on the importance of the physician foreseeing and preventing deformity as far as possible in these cases and of special individual treatment. The article is illustrated.

THERAPEUTICS AND PHARMACOLOGY.

Inhibitory and Anesthetic Properties of Magnesium Salts.—S. J. Meltzer reports the results of a number of experiments conducted by himself and John Auer during some months past at the Rockefeller Institute. Of the four main inorganic constituents of the animal body—sodium, potassium, calcium, and magnesium—the effects upon nerve and muscle of only the first three have been very carefully studied, those of magnesium for some reason having hardly been considered at all. In studying the action of various substances injected into the brain Meltzer found that magnesium produced paralysis rather than convulsions. Pursuing this lead, he found that this element with its salts invariably caused depression or inhibition of nervous and muscular action. In a few seconds after the injection of a small dose of the sulphate or the chloride of magnesium respiration ceased and the animal would die without the struggle of asphyxia and without any sign of sensation unless artificial respiration was practiced for a long time. When injected rapidly, 0.1 of magnesium sulphate is profoundly toxic, but as much as 1.5 of the salt, if injected slowly in the course of an hour, will occasion no untoward symptoms. Herein is the probable explanation of the fact that Epsom salt, when taken in the ordinary way, produces no poisonous symptoms; some absorption doubtless occurs, but it occurs so slowly as to be harmless. In another series of experiments it was ascertained that solutions of magnesium salts applied directly to a nerve trunk caused a complete block, abolishing conduction entirely. In a third series it was found that by means of subcutaneous injection of magnesium salts complete general anesthesia, with perfect relaxation of the muscles, but without impairment of the vital reflexes, was produced. In a fourth series of experiments the magnesium salts were injected into the subarachnoid space of the spinal cord, mostly by lumbar puncture. Monkeys were the animals experimented upon. The injection of magnesium sulphate in a dose of about 0.06 per kilo of the animal's weight caused within a minute or two complete anesthesia and paralysis of the tail and hind legs. This discovery has been put to practical use in twelve operations performed under the influence of intraspinal injection of magnesium sulphate. The highest dose employed was 0.2 per kilo, or 15 drops of a 25 per cent. solution for each 20 pounds of body weight. In the first eight cases some chloroform was used to supplement the effect, as the tentative doses of the salt were very small, but in the last four the magnesium alone sufficed. The best time for operating was found to be three or four hours after the spinal injection. As a precautionary measure the author insists that the Fell-O'Dwyer apparatus for artificial respiration be on hand whenever this magnesium anesthesia is employed. Finally Meltzer reports the cure of a case of tetanus at Roosevelt Hospital. After the employment of 115 c. c. of tetanus antitoxin without effect, the

first injection of a solution of magnesium sulphate afforded great relief for thirty-six hours, and after a few more injections the patient was pronounced cured.—*Medical Record*, December 16, 1905.

Behring's New Tuberculosis Remedy.—A. C. Klebs, Chicago (*Journal A. M. A.*, December 16), remarks on the sensational element in Behring's announcement and also on the fact that there are some ambiguities of expression that he thinks may perhaps have been intentional. We must take it, he states, that Behring did not mean to say that the remedy he has discovered will cure tuberculosis in all its stages, but that it will prevent in those infected the development of destructive processes, i. e., phthisis. This accepted, he proceeds to analyze his theory of a curative principle. It seems that the curative principle is found in a well-defined constituent of the tubercle bacillus which Behring calls TC, the same designation as that given years ago by E. Klebs to his assumed curative principle contained in tubercle bacillus cultures. The healing action is exercised by the transformation of this TC within the living body cell into a hypothetical derivative which he calls TX because he does not know whether it is a ponderable body or not. A cellular immunity is thus produced, quite different from the ordinarily accepted humoral immunity, and Behring says his clear conception of this was derived from an acquaintance with Metchnikoff's work on phagocytosis. Experimental proofs of this, however, are not given. From Behring's sketch of the method of preparation, Klebs understands that the TC is obtained by grinding up what Behring calls the "rest bacillus," a product remaining after certain toxic and non-toxic groups of substances, including Koch's tuberculin, have been removed. Behring considers it of importance for the comprehension of the therapeutic TC action, that although incapable itself of reproduction, it can produce tubercles that do not caseify or soften, but heal spontaneously. From the above statement of the substance of Behring's address, Klebs deduces certain definite facts. First among these is the fact that Behring finds his curative principle pre-existent in the tubercle bacillus, and this implies a radical change from his formerly expressed views, and is, he claims, a brilliant vindication of the view persistently maintained by E. Klebs and substantiated by him in numerous tests in animals and men. Klebs sees the mechanism of the immunizing process of his TC in a bactericidal action. A. C. Klebs here thinks, from what he knows of Behring's previous studies, that it is probable that he also imagines a more or less direct bactericidal action to take place. On the whole, he says, "it seems probable that Behring's new method is based on principles that have already been more or less elaborated by others, especially by E. Klebs and Metchnikoff." "How much, ultimately, suffering mankind is to profit can not be predicted, nor can Behring's expressed, though carefully and ambiguously worded expectations mean anything but a plausible, by him yet unproven, hypothesis of a curative principle, applicable in human tuberculosis."

DERMATOLOGY, SYPHILIS AND ROENTGEN THERAPY.

Cerebral Hereditary Syphilis.—William J. Butler (Chicago, Ill.) says the nervous system is attacked by hereditary syphilis in a considerable proportion of cases, sometimes without cutaneous lesions, the disease remaining latent until puberty or later. The pathologic conditions include cranial osteosclerosis, periosteitis, meningitis, endarteritis, thrombosis, as well as atrophy, sclerosis and softening of the cerebral cortex. The symptoms are recurring convulsions, severe headache, worse at night, and impaired intelligence. Later the epilepsy may disappear. Hemiplegia frequently develops and the patients may become paralytic idiots. Partial motor paralyses, aphasia and disturbances of the special senses may occur. Mental deficiency, occasionally congenital, usually develops at a later period of childhood. Prognosis is unfavorable unless the condition is recognized and treated in its early stages. Congenital syphilis should be vigorously treated with mercury during the prevalence of cutaneous manifestations and, when nervous symptoms develop, potassium iodid, or if this disagrees, iron iodid, should be added.—*American Medicine*, December 9, 1905.

Action of the Roentgen Rays Upon the Blood—An Experimental Study.—Roger S. Morris (Ann Arbor, Mich.) studied the more immediate effects of moderately long exposures (3 to 5 hours) to the Roentgen rays upon the blood of rabbits and rats. After reviewing the work of previous experimenters and detailing his own results, he arrives at the following conclusions: 1. The Roentgen rays cause a marked diminution in the absolute number of leukocytes in the peripheral circulation. 2. Preceding the leukopenia there may be a moderate rise in the number of leukocytes 8 to 12 hours after the exposure, the increase being due largely to the greater number of polynuclears. 3. The lymphocytes are especially susceptible to the action of the rays. 4. Alterations in the histologic characters of the lymphocytes and polynuclear amphophiles may be found in the rabbit, similar to those described in the lymphoid tissue and bone marrow. 5. The harder the tube, the more pronounced the changes produced. 6. No changes in the red blood cells or hemoglobin take place within the first few hours following moderately long exposures.—*American Medicine*, December 2, 1905.

Copper Salts in Actinomycosis and Blastomycosis.—In this paper, which he calls a preliminary report, A. D. Bevan, Chicago (*Journal A. M. A.*, November 11), remarks that, while

iodid of potassium has a very definite and positive effect on circumscribed lesions of actinomycosis, a very large proportion of the cases of abdominal and lung infection are fatal, in spite of the treatment. He has been looking therefore for some other method of treatment, and the well-known action of copper salts on vegetable parasites suggested their employment. Of these the most powerful is the sulphate which the French investigators have shown can be taken in doses of from 2 to 8 grains a day for a long period without deleterious results. He has used it in several cases in doses of from one-quarter to one-half a grain, in some cases increasing it to one grain three times a day, also employing irrigation with a 1 per cent. solution. The results seemed so satisfactory that he has also used it in two cases of blastomycosis, the skin lesions of which are likewise benefited by iodid of potassium, especially in conjunction with the X-ray. A case of each of the two diseases thus treated with good results is reported. The treatment seems to him to be a logical one, and he thinks that collective further experimentation should be undertaken to determine the value of copper as a cure for these conditions. It is possible that, as in syphilis, a mixed treatment, using both copper and the iodids, would be most effective in some cases.

Should the Youth of this Country be Instructed in a Knowledge of Sexual Physiology and Hygiene?—Prince A. Morrow (New York City) says the general principle is laid down that the education of the public is the most valuable of all measures for the prevention of communicable diseases. Its importance is emphasized in the case of diseases the communication of which lies entirely within the control of the individual. The object of the proposed education is to give the youth of this country a clear comprehension of certain physiologic truths which have a direct bearing upon the regulation of their sexual lives and of the serious consequences in the shape of disease and death which follow a breach of hygienic laws. In other words, it is to teach them how to live according to the laws of a healthy nature. This instruction in the physiology and hygiene of the sex function should form an essential integral part of the education of youth. Dr. Morrow criticises our present educational system the policy of which is to launch the young into the world in complete ignorance of everything pertaining to the laws of life reproduction. In seeking this knowledge the youth is but obeying a law of his mental evolution. Since this knowledge cannot be had from legitimate sources—from parents and instructors—it is gained surreptitiously and usually from depraved sources—dissolute companions or erotic or quackish literature. To be salutary as a safeguard, therefore, this hygienic education should be given in youth, for it is during this period that the foundations of what may be termed the "sexual character" are laid and habits of mind and practices are formed which, in a great measure, determine the future sexual life of the individual.—*American Medicine*, January 13, 1906.